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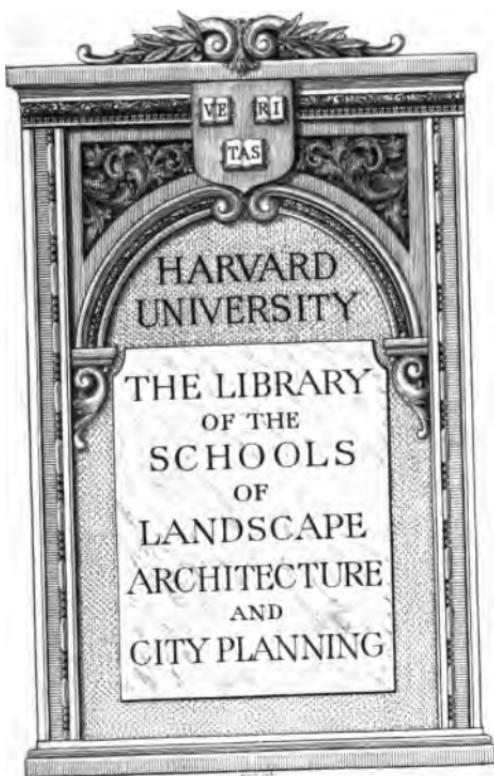
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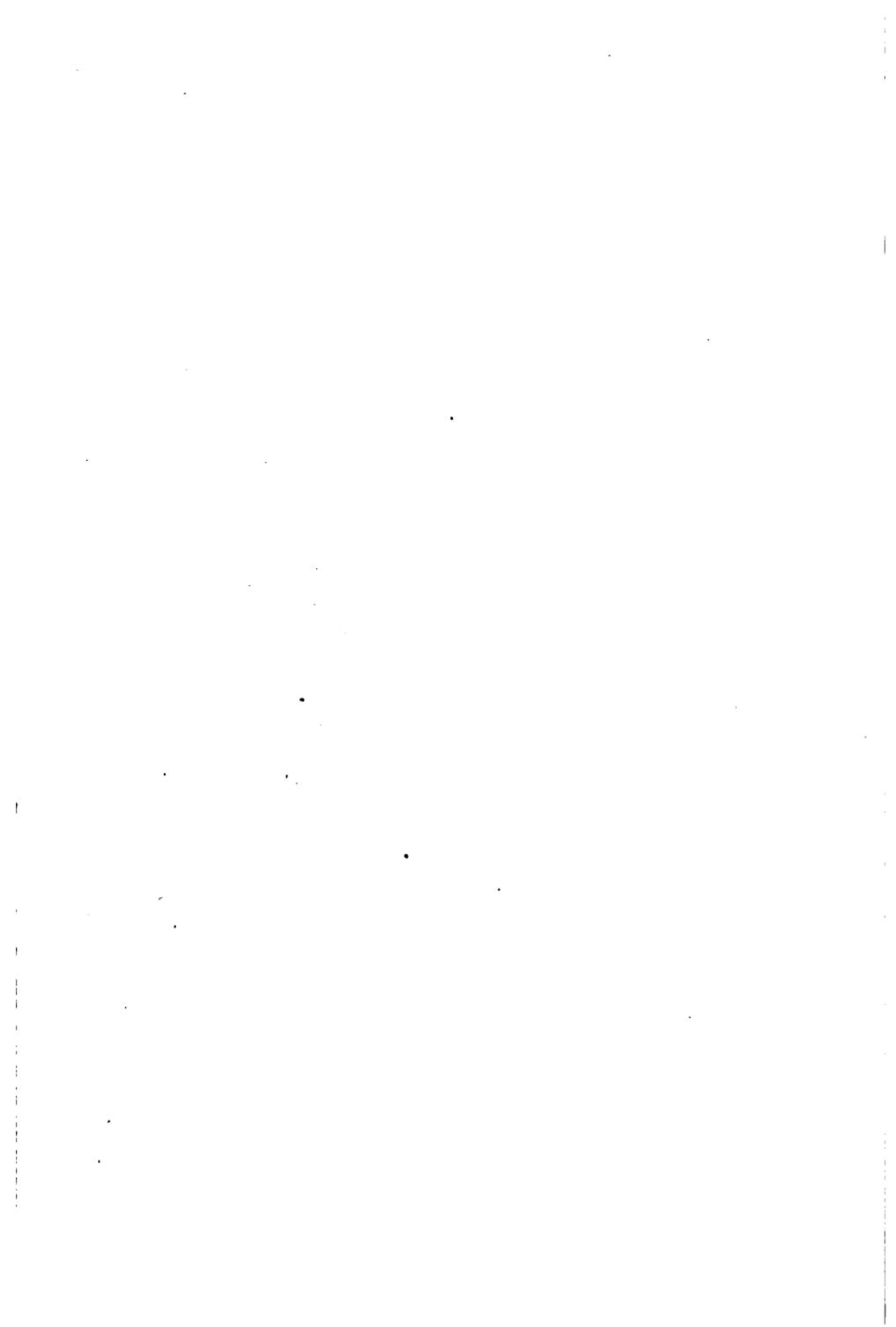
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CITY HOMES ON COUNTRY LANES



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THOMAS TIBBETT



HER HOME-IN-A-GARDEN

CITY HOMES ON COUNTRY LANES

PHILOSOPHY AND PRACTICE OF THE
HOME-IN-A-GARDEN

BY

WILLIAM E. SMYTHE

AUTHOR OF

"THE CONQUEST OF ARID AMERICA,"
"CONSTRUCTIVE DEMOCRACY," ETC

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TO MEMORY
"ANNISQUAM"



FOREWORD

I am an optimist.

I believe the world is going to be a better world for our common humanity in the next decade—the next generation—the next century—than ever before in the long history of the race. And I believe the next passion of mankind will be for the soil—that there we shall “take Occasion by the hand and make the bounds of freedom wider yet.” But, if there is to be a transition in the life of the land—if new forms of industry and society are to emerge—then this will be due to the fact that the old life on the land has failed, is breaking down, and is doomed to pass away.

That is what I believe to be true. In saying so, I sound no note of pessimism, but rather the note of hope, of confidence, of boundless faith in what the future is to bring forth. I know the land is to be the healing and the saving of the people—of our people and of all the peoples.

There is no other refuge.

But before we can build the new life we must clearly understand that the old life has failed, and *why* it has failed. Then we must proceed to discover the principles upon which the new and better life is to be founded. In doing so, must we not inevitably draw nearer to the

Divine Purpose in making the goodly earth and setting man in the midst of it? And shall we not thereby evolve the Spiritual Man of the Soil, who, conscious of his partnership with God, enters at last into his true dominion?

*Cosmos Club,
Washington, D. C.*

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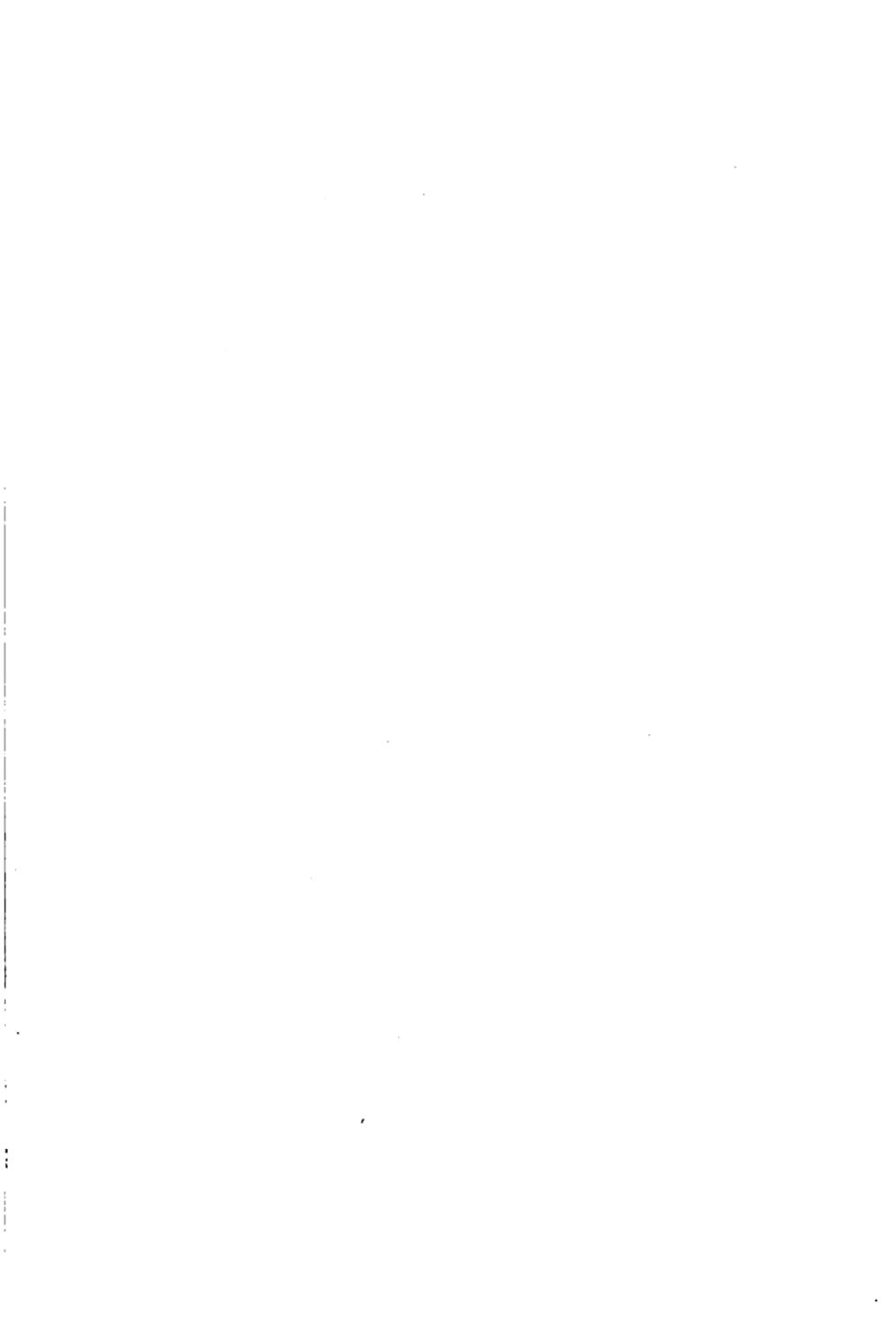
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PROLOGUE

Of what avail
Are plow, or sail,
Or land, or life,
If Freedom fail?

Emerson.

PART ONE
THE WAY OF LIFE

CITY HOMES ON COUNTRY LANES

PROLOGUE

THE INSPIRATION

“True dignity abides with her alone,
Who in the silent hour of inward thought,
Can still respect, can still revere, *herself*,
In lowness of heart.”

Wordsworth.

THERE once lived a very noble woman who shared with me the dream of a new and better life to be realized on the soil, and who, in her own sphere of action, did what she could to bring the ideal to pass.

For many years she was vicariously associated with a great public movement that transformed deserts into gardens and filled the waste places with homes. But usually she came first, and, after her, the homes and gardens. Hers was the era of the unbuilt house, of the unplanted ivy and roses, of the untamed soil, of the new hopes that struggled up toward the light through thickets of sagebrush and mesquite and cactus.

Often she found herself in poor frail cabins on the desert claims, and often she mingled her tears with the tears of lonely pioneer women who could not see

the glory that was to be—perhaps because of the clouds of dust that came swirling from the treeless land. So she wept with the women, laughed with the children, and shared with the sturdy, ambitious men the hope of independence that sustained them in their struggle with the grim old desert. But these experiences always left her sad. "It is fine for the men," she would say; "they see their chance for achievement. But it is hard for the women—hard." And she felt there must be a way to soften, to ameliorate, the lot of the pioneer woman.

Fate made her at length a pioneer woman herself—the First Lady of a settlement embarked upon the most daring adventure of all, dedicated to the proposition of "a little land and a living" with the smallest unit ever adopted by any considerable number of families at one time and place. She did not shrink from her duty, her opportunity, but met it more than half-way with outstretched hand. "Now," she said, "we shall see if it is possible to bring a little sunshine into the lives of the women, while the men are showing us what they can do on the land."

The amount of money available for the building of her home was small; the hope of a clubhouse, suited to her plan, remote. In this dilemma, she put nine-tenths of her building fund into a single beautiful room, ideally adapted to social purposes. For the rest of her home—tents; nice, roomy tents, connected by covered passages, and supplied with floors, windows and doors; so that in a benign climate, where shelter is almost negligible, it made a livable and attractive "camp." Even so, it represented a sacrifice of personal comfort in the interest of her numerous neighbors.

Festivities began with the "house-warming," which occurred even before the roads were made, though twenty or thirty homes were built, and others under way. It happened to be a Fourth of July—the flag had been broken out on the tall staff for the first time at dawn—and fireworks lighted the way for the settlers as they came through the sagebrush, or new-plowed fields. In spite of the season, it was cool enough, in that land of divine nights, to justify a modest blaze in the great cobblestone chimney, in token of hospitality. Everybody came in the best they had. Even dress-suits were worn by those who had them.

The affair was more than a "house-warming," more than a social function. It sounded a new note—a note of absolute democratic fellowship, for everybody was formally invited and everybody came; a note, too, of distinction, for it was then and there understood that the social and intellectual life of the community was to be placed on the highest possible plane, and steadfastly maintained at that level. Moreover, it was announced that on the following Thursday afternoon, and every Thursday thereafter, the hostess would receive the ladies of the community in her big reception room; that every lady was cordially invited; that these affairs were designed to be as fine in all respects as they would be in any town or city of the land; and that in that spirit each person was urged to do her part.

And the ladies responded with alacrity and the utmost good will. There were no absentees; no one was ever tardy; no one ever wore less than her best. Among them were wives of professional and business men of liberal culture and wide social experience. There were

others who were strangers to such functions. All met the same warm hand-clasp and gracious smile at the wide-flung door; all were soon equally at ease. The flowers, the music, the games, the refreshments, the favors, were precisely what the hostess would provide if she lived in town, or on a lordly country estate, instead of in a humble "camp" on the side of a sagebrush hill. And she made those pioneer women happy—filled their cup to the brim. One of them remarked: "It's worth all the work and worry of the week, just to be here on Thursday afternoon." It was not simply the good times—it was the leveling of all social barriers, the striving for the very best there is in life.

The influence thus projected did not stop with one afternoon in the week, nor with the women alone. It spiritualized the whole community. It elevated the public meetings in the rude town hall, setting a high standard for all entertainments, and all meetings of an intellectual or social character. It overflowed into the front gardens and beautified them with flowers, some of them still fragrant with roses and tender with vines given by the gracious lady on the hillside. For, as her own love was perennial, so she loved to give her friends perennial plants that should fill the air with fragrance year after year. Yes, some of them are blooming yet; and they do not forget her. They have long memories—those roses!

I tell this story of the beginnings of our New Earth—the New Earth that is to bring security and contentment to millions—because it illustrates a deep social principle, the absence of which has had its part in the decadence of American rural life; also, for another

reason of equal importance—the fact that it brought forth a noble phrase that immensely widens our horizons.

The first experience in social upbuilding was followed in two other communities under the same leadership; then came a period devoted to the intensive cultivation of the ideal by other means. One day near the close of her mortal life—the Pale Horse and his Rider were even then on the road and rapidly approaching—she walked into my library and laid a slip of paper on the desk with the smiling request: “Some time when you feel just like it, please write something for me with that title.” I looked and read the cryptic words:

“*The Dignity of the New Earth.*”

It was a revelation, and to me a startling revelation—not only of the depth of her own thought, but of the broad metaphysical basis of our work and our ideals.

This, then, is *her* chapter, as nearly as it is possible to approximate her thought and language:

I was reared in an old New England town. As a child, I loved a certain street which was filled with fine old homes setting well back from the rows of stately elms. These were the homes of our old families. They seemed enviable to me, not because of their luxury, for most of them were not at all palatial, but because of their dignity—a dignity attaching to their age and permanence.

In these homes children were born and grew up. And in these homes the children’s children were born and grew up. So it had been for generations; and, in a few cases at least, for two centuries. To my childish

mind there was no dignity like the dignity of a permanent family home from which all members of the household went forth into the world, and to which they might all come back on occasion.

To me the contrast between the repose of that street of old family homes and the restlessness of newer sections was always very striking. It was an industrial town that grew rapidly. As factories multiplied, new population flowed in; at first from the surrounding country and then from foreign parts, until the number of languages spoken was amazing. This new population was mostly of floating character. It was housed in crowded tenements. The part of the town where it lived tended toward slum conditions. It was, of course, the very opposite of the street of old family homes. The gulf between them was not wealth and poverty. It was a far deeper gulf. It was dignity and the lack of dignity, and that is a matter of character, not of worldly possessions. But environment and training have everything to do with character.

The lesson borne in upon me was that ownership and permanence of the home are essential to the highest dignity of life. Now it oddly happened that I was never to know these advantages in my own experience. While we owned more than one home in the course of our lives, they were only temporary, because it was of the nature of our work that we should be constantly on the move. This work had to do with the making of homes for thousands of people in many States. I have always thought of it as evangelical work, and of my husband as an evangelist of the Peter-the-Hermit sort.

My longing was for a home that might become a

family shrine, where my children and grandchildren might come after me. In the defeat of my own hopes I became passionately attached to this hope for others—for our country and the world. To make such a hope possible of realization, I came to see that there must be a New Earth, or rather a new conception of the earth in its relation to the home.

As our work unfolded over a period of more than a quarter of a century, I thought I saw the dawning of the New Earth in the very humblest way in a pioneer settlement where we went to live and work with the people who shared our hopes. Everything was very crude, my own home with the rest, yet, I could see in the little homes all about me that street of my childhood's fancy in the old New England town; and I could look beyond the crude beginnings to the time when the same quality of dignity, growing out of the same laws, would become the possession of the many.

The New Earth, as I think of it, begins with the recognition that it is God's gracious provision for man, and as such too sacred for any purpose except to serve the needs of humanity. That conception rules out speculation. To put a price on land beyond fair compensation is unjust and really nothing less than an attempt to repeal a great law of God, and defeat His ends. This, too, from so low a motive as selfishness—a selfishness to be paid for by woman's toil and tears and by innocent children deprived of their heritage.

When we comprehend the ideals of the New Earth in all their purity and beauty we shall strive to make the most of it in every way, and the measure of our success will be the amount of human happiness thereby created.

To my mind, these hopes are inseparably bound up with the dignity of mankind—its capacity for self-respect, its worthiness in every sense, its elevation of thought, bearing and conduct.

The next attribute of the New Earth is workmanship. It is not to be like the slovenly industry I have often seen on many farms that so evidently belonged to the Old Earth where pride of workmanship was wholly absent.

Pride and Dignity—these are twin sisters. I mean the kind of pride that springs from worthiness, that scorns things mean and low, and most of all scorns them in ourselves.

The New Earth is to be the object of loving care as much as our children. It begets a new spirit that is born of ownership, of the thought that here on this spot of land I will rear a family rooftree; that here my children will come in future years, and after them their children, and their children's children; and that thus the generations that trace back to me will enjoy the shade of my planting, the shelter raised by my thoughtful care for the future. Could anything so elevate, so dignify, the labor of the pioneer? Could anything so invest it with a skill and a forethought surpassing all human skill and forethought and reflecting the Divine Intelligence?

Beyond the individual and family life lies the life of the community. It is here I see the widest possibilities of the New Earth. It is here that the manifestation of Love will be highest because it loses much of its selfishness in the thought of the Common Good.

In my own experience I was often disappointed in

the expression of our ideals at the hands of individuals, but almost never disappointed by their expression at the hands of the community. If ever in the midst of our crude surroundings I have caught a glimpse of "the Light that Never was on Sea or Land" it was when a number of us were gathered together and giving expression to the ideals of the New Earth. I think—indeed, I *know*—that then for fleeting moments we lived in the great life of the future, though of course we only touched the hem of the garment.

The spiritual outgrowth of the conditions that the New Earth provides for vast numbers will surpass all the dreams of the dreamers. Christ will come again. He will live in the lives of millions of consecrated souls, and He will bring dignity in its true sense to common things and the common experience.

Dignity as I see it in this connection is a form of morality, because morality is the outward expression of that self-respect which dwelleth within, and is, indeed, the highest form of self-respect. Hence, anything that enhances the dignity of a man enhances his morality, and it was ever clear to me that this was the great office of the New Earth—to lay deep and true the foundations of dignity in the common life of our people, which is equivalent to saying the foundations of self-respect and the highest morality.

And here again, we pass from the individual to the community, and ultimately to the nation and the world. The New Earth so becomes in the course of time the Redeemer of mankind. It erects his life and roots his influence—his all-conquering Thought—in the fertile soil of ownership, but of ownership limited by conscience

to his needs—those needs measured by the excellence of his workmanship and, hence enabling him to do well with a little land. Into that workmanship goes all the love of his family, even of the family that is to come into being in the far future. From these conditions spring growth of dignity and self-respect, and with it elevation of thought and bearing. This becomes the habit of the man, the habit of the community. It spreads with the spread of the New Earth and its ideals until it becomes in fact the New Heaven.

CHAPTER I

DIGGING TO THE ROOTS OF A DYING TREE

IT was generally assumed that the world would never be the same after the Great War, and that among the results of the mighty upheaval would be new forms of life on the land. In some countries, it was plain, this transformation would chiefly relate to ownership and distribution of the soil; in others, to the manner of its use; but it was generally anticipated that everywhere the influence of the cataclysm would be registered upon the land—in the character of its homes and institutions—quite as clearly as in any other department of civilization.

British statesmanship took stock of these possibilities while the War was still at its height, and began to brace itself against the impact of conditions that must assuredly follow the ending of the conflict. Not only in the Mother Country, but in the oversea colonies—in Canada, in Australia, in New Zealand, in South Africa—expert minds gave careful forethought to preparedness for peace. They believed their weary peoples would turn to the land, as to the shadow of a great rock.

In the United States there were men who sensed the same situation. Long before the Battle of Chateau Thierry, Franklin K. Lane, Secretary of the Interior,

began to ponder the problem of Reconstruction. He anticipated that millions of men serving in the Army and Navy would be more or less weaned from their old occupations, and that a large proportion of those formerly employed in the factories and workshops would have fallen in love with outdoor life. He thought, too, that many of the places vacated by the selective draft would be filled by permanent occupants when the soldier returned, so that they would find the old familiar doors closed in their faces. It also seemed probable that the cessation of the intense industrial activities of the War would precipitate upon the country an Army of Unemployed, with consequent suffering, throughout a long period of readjustment. Though busily engaged as a member of the Council of National Defense in his part of the work of prosecuting the War to a successful finish, he yet found time to look beyond that point, and consider what the Government could, or ought, to do, in the way of preparation.

"Every country has found itself face to face with this situation at the close of a great war," he told the President, in a letter that will be historic. "From Rome under Cæsar, to France under Napoleon, down even to our Civil War, the problem arose as to what could be done with the soldiers to be mustered out of the military service."

He looked back to the close of our own Revolution, and recalled how the veterans had threaded their way through the forests of the Alleghenies to make homes in the valley of the Ohio. He recalled the phenomenal settlement in the Mississippi Valley, which followed

close upon the cessation of the Civil War, when the citizenship of whole States, like Kansas, Nebraska, and the Dakotas, largely consisted of men who had worn the blue. He realized, however, that conditions had changed in 50 years; that there was no longer a patrimony of fertile public lands available to homestead entry, and requiring no preparation beyond the means of the individual settler. Nevertheless, the problem of the returning soldier remained to be dealt with. It was not an easy problem, but Secretary Lane possessed both the vision and the power to tackle its solution.

He summoned to Washington men whom he thought especially equipped for the task by their knowledge, their experience, and their sympathies. He was thinking primarily of the returning soldier, but soon discovered that the problem was much broader; that it concerned directly or indirectly, the country's entire citizenship—indeed, the fate of our American civilization—for it was found that America was dying on the land! It would be but a poor service to the returning hero to invite him to take a share in a failing enterprise, and it would amount to just that to offer nothing better than the old conditions of rural life.

Secretary Lane's counselors decided to dig down to the roots of the subject, as one would dig down to the roots of a dying tree, and find out what had happened to the fabled "cornerstone of American democracy"—the farm home. There was plenty of evidence that *something* was wrong. Without harping upon the dreary statistics regarding the marked tendency from rural to urban life—a tendency that dates back to the first national Census of 1830, and has been increasing

ever since—it is worth while to mention a few of the latest revelations on the subject:

The abandonment of New England farms is a very old story; nevertheless, it is startling to realize that Massachusetts had three times as much land in cultivation 100 years ago as now, and that 92.8 per cent of her entire population dwells in urban centers. Notwithstanding the general increase in land values during the past few years, there are still opportunities to obtain good land, most favorably situated with respect to great and growing markets, for one dollar to ten dollars per acre. And that within a few miles of the spot where the Pilgrims landed in 1620!

It is only within recent years that the rural decline has been noticeable in the Middle West, but in the past ten years the number of farms decreased throughout that fertile region in every State except Wisconsin and Minnesota, while there the increase was slight. In the country as a whole the number of new farms fell off about 90 per cent; to be exact, from 10.9 per cent between 1900 and 1910, to 1.4 per cent between 1910 and 1920.

In Ohio, the number of habitable vacant farmhouses increased 61 per cent in a single year; from 18,000 to 29,000 between June, 1919, and June, 1920. The number of men and boys on Ohio farms decreased 30 per cent in the same period of time.

In two years 46,000 men left the farms of Michigan, and the vacant places grew from 11,831 to 18,232—making a total of 1,666,000 abandoned acres. In April, 1920, there were left on the farms of Michigan

an average of but eleven men and boys for each ten farms.

In New York State, 22,540 farms were abandoned in the last ten years. The State has a total population in excess of 10,000,000, but the number directly engaged in agricultural pursuits is only 380,000.

Another disturbing feature of the rural situation is the increase of tenant farmers. Figures are not available for the country as a whole, but in many of the richest agricultural States, more than half of the land is in the hands of such tenants, who have no stake of their own in the soil; hence, no interest in maintaining its fertility, or improving the standard of rural life.

But all this bears only upon effects, not causes. The easiest explanation is that men prefer the town, because it pays big wages; and that war-time wages were particularly alluring. Doubtless the War accelerated the movement; but, since the movement preceded the War by at least 80 years, the cause must be sought elsewhere. So, at least, thought Secretary Lane and his advisers; and they determined to investigate the favorite theme of poets and orators: the proposition that the farm home is the cornerstone of American democracy, and the source of all that is best in our national life.

They started with the assumption that the drift throughout the nation from the country to the city was much greater than the tide in the opposite direction; and that the "Back-to-the-land" movement, speaking in broad terms, had signally failed. They then went on to consider another assumption, which

represents an almost universal conviction—that this tendency is anti-social—and asked themselves the question: *Is it so?* If it is actually unfortunate for individuals and society, then it must be such in lowered—

Health;
Physical development;
Mental development;
Spiritual development;
Financial development;
Human kindness;
Social solidarity;
Civic ideals;
Patriotism;
Ability to think clearly on public and social questions;
Initiative and ability to carry out convictions;
Joy of living.

As a first logical step, they employed an expert to make a study and analysis of such exact information, bearing upon their problem, as could be found in the great Library of Congress. The quest was not highly successful. While much interesting information was gathered, it was fragmentary, bearing upon typical localities which had been selected for social surveys, and not representative of the whole national field. Hence, it was suggestive rather than conclusive. It was necessary to supplement it by extensive studies, drawing from many different sources of information, much of it gathered from current newspapers and magazines; and much obtained from interviews with

public men, sociologists and economists throughout the United States.

The study as a whole was at least eager and pains-taking, and its conclusions so clearly in accord with obvious social tendencies as they must appear to the mind of any thoughtful observer, that there can be little doubt of their general acceptance.

It is a natural and widespread belief that life in the open country is far more healthful than life in crowded towns. So it ought to be, and so it would be if country life were properly organized, and kept pace with modern scientific knowledge and thought. That, however, is precisely what it has not done, and precisely what it can not do, unless radically reformed. The city, on the other hand, is marching to the music of science, and keeping step with the Twentieth Century. This fact bears distinctly on several of the questions raised in Secretary Lane's inquiry; and especially on the question of public health.

There are certain diseases indigenous to the old forms of country life—typhoid fever, for example, which is transmitted by bad water and flies. The remedy is a pure water supply and the abolition of flies—at least from the homes. This is within the reach of science, which modern cities faithfully invoke, but which the old-fashioned farm generally ignores, together with other sanitary precautions essential to health preservation. It follows, as a logical consequence that typhoid fever is a greater menace in the country than in the city.

Impure milk is another medium for the transmission of certain diseases. To say that the milk supply is

generally purer in the city than in the country sounds like a paradox; yet, it is in the city that a rigid system of inspection is applied; it is there that science reaches out its hands to provide the strongest possible safeguards for the public health in this respect.

Malaria and kindred troubles are mosquito-borne. Their dominion is almost wholly confined to the rural districts. City homes outlaw them—at least to a large extent.

Sewerage is not an agreeable topic of polite conversation; yet, it has a most intimate relation to health, and it represents one of the most striking triumphs of modern science. That triumph is largely confined to cities. Indeed, the lack of sanitary conditions in this respect is quite appalling in a large proportion of country homes; consequently, any form of disease that is influenced in any degree by the method employed in the disposal of sewage is more menacing in the country than in the town.

Pneumonia often comes from poorly ventilated rooms and uneven temperature; intestinal diseases, including appendicitis, from badly-balanced food rations. Modern housing conditions, and the systematic propaganda against preventable diseases, account for the fact that these serious troubles are likely to be less prevalent and less generally fatal in the town than in the country.

Hookworm is distinctly rural in origin and prevails in localities where a large part of the population has unsanitary toilet accommodations. The Rockefeller Foundation, in the course of social surveys in the South, found places where 50 per cent of the people had no facilities of the sort whatever; and one locality

where 85 per cent was without them. Such instances are, of course, extreme; yet, they could not conceivably occur at all under the health regulations of any city or good-sized town in America.

In weighing the relative health conditions in urban and rural life, it must be considered that a very large part of the urban advantage in this respect is due to the mere fact of dense population. This is due in part to the element of "overhead expense"; in part to the fact that the city naturally attracts the highest talent in every profession.

In this classification comes everything that requires the presence of hospitals, with prompt attendance of good physicians, and the care of trained nurses. Such institutions require conditions which the unorganized life of a sparsely settled countryside could never encourage or support. There are, and there can be no exact data to show the drawback of country life in this respect; but none are needed. The case is plain enough on its face. Fine hospitals, with the latest scientific equipment, can only exist in the midst of a considerable population. Whatever gain they represent in the matter of human comfort and welfare is the gain of the city; whatever loss their absence entails, is the loss of the country. It is a matter that touches the health problem at many points.

One of the sharpest points is that of maternity and of infant mortality. According to the best available statistics, one woman gives up her life for every 154 babies born in America. In other words, almost as many women perished in giving birth to 4,800,000 ex-service men of the great World War, as the total num-

ber of our men killed in battle and dying from wounds. Except tuberculosis, it is the greatest single cause of death to women between 25 and 50 years of age. It is, therefore, a fundamental element of health. This is particularly true because the vast proportion of the 4,800,000 ex-service men were not injured at all; whereas, when these particular men were born, practically every woman was confined to her bed from periods ranging from a few days to several weeks. Of those permanently crippled, either slightly or seriously, the number is far less than the number of women who were permanently injured in these 4,800,000 confinements. Many more women than service men were completely disabled.

What has been said about hospitals, and the care of mothers immediately before and after childbirth, has a direct bearing on the subject of infant mortality. Another item to be recorded on the side of city advantages, is the work of popular education concerning motherhood which is constantly carried on. Among the poorer mothers in large cities, the city health department, Red Cross and other agencies, render a degree of help and advice that is not available to country mothers; and in the large cities there are little mothers' leagues to which girls between the ages of 12 and 14 belong, and in which they receive instruction in the care and feeding of their little sisters and brothers, and pass it on to their mothers.

The excessive infant mortality discovered in one survey was summed up as being due to "the mother's ignorance of proper feeding, of proper care, of the simplest requirements of hygiene. To this all the other causes must be regarded as secondary." Surely this

must be so, if there is anything at all in education regarding the common duties of life, and any hope of raising the standard of efficiency in that respect. And it is the city that can do it—is doing it—far more than the country. It is a part of the organized life of the town which contrasts so sharply with the over-individualistic life of the countryside.

We see it again in the matter of nurses. In times of illness, it is usually difficult even to obtain household help, and nursing is often left to the unskilled hands of the older children, or of the neighbors and their children. Five millions of the best men and women have come into the world under these conditions. Sturdy mothers and noble children have survived the experience; yet this circumstance is no more an argument against the modern scientific conditions now enjoyed by the city, and impossible to the old and discredited system of rural life, than the fact that Abraham Lincoln read his lessons by firelight is an argument against the use of the electric lamp.

Not only has the city the advantage of fine and abundant hospitals, with their complete staffs of highly-trained physicians and nurses, as well as free clinics for the needy, but they also attract the ablest specialists in every line. Take dentistry (half our bodily ills are now traced to the teeth) and ask yourself if there is any comparison between the practitioners and facilities always available in the city and those usually found in the country. Add to this the thorough inspection of teeth now quite generally made in city schools, and the laxity in that regard in many, if not most, country schools; and it is apparent at a glance that so far as

this department of health is concerned, the city is far in advance. So with the oculist, and all other fields of specialization, the city has absorbed and holds in its firm grip the best of everything. And it scores heavily on the side of health for the city-born and city-reared against their brothers of the backward rural districts.

It is popularly believed that rural life is most favorable to physical development, but athletic instructors generally have come to the conclusion that it does not develop the body symmetrically; that certain muscles are exercised to fatigue, while other muscles are exercised insufficiently. The report on athletic exercises and organized play at the 1920 session of the National Country Life Conference in Chicago favored special types of athletic exercises in country schools on that account.

The young of all animals, and particularly human beings, attain symmetrical development through play. City children now have their playgrounds and organized play efforts, while country children really play little and work a great deal. Probably there is more child labor on the farm than in all other industries combined. By that same token, there is less balanced physical development.

It was hoped the record of physical rejections in the World War would throw a strong light on the relative health of urban and rural communities. While the record is marvelously complete, it does not help much in this inquiry, for the reason that the Census unit of 2,500 as the dividing line between urban and rural

population was not adopted, but the local draft board unit of 25,000. Moreover, local districts often included portions of rural territory which were, therefore, rated urban. Such as it is, the record shows 528 defects per thousand among rural soldiers, against 609 among the urban. A true division would almost certainly have been in favor of city life, as it was in the Civil War. At that time, however, a vast majority of the people lived in rural districts, while now the major portion dwells in towns.

A somewhat clearer light was thrown upon the subject, when considered from another interesting standpoint—that of comparative immunity from certain diseases after entering the Army. In four out of five instances the ultra-urban State of New York stood first, with the rural States last in every instance. Pennsylvania and New England, preponderantly urban, also made an exceedingly good showing. This is not entirely conclusive, because of the racial element that enters into the equation—more of the Eastern urban men being of foreign blood than of those from largely rural States.

So far as Secretary Lane's inquiry shed light on those matters, it was strongly confirmatory of the city's claim to superiority on the side of public health and individual physical well-being. It is a superiority inherent in the fundamental conditions of modern urban life. In a word, the drift from country to city is *not* unfortunate for society, from the standpoint of health.

The initial point for every person who wants to make the most of himself is, of course, the schoolroom. Every worthy parent wishes his child to have the best

possible education within the limits of his opportunity. It is here we may appropriately begin our consideration of the effect of the cityward movement on the mental development of the American people.

The efficiency of the Little Red Schoolhouse is a legend among us; thence have come most of our statesmen, poets, orators, captains of industry—the leaders of our national life. This was certainly true of the day in which a very large proportion of our population was rural, and before the organization of city life arose to the dignity of social science; but the slightest comparison of educational facilities in country and town, as they exist to-day, will convince the reader that the ancient legend is no longer based upon facts.

The rural child receives only about 65 per cent as much schooling as the city child. This is due to the slack attendance and shorter school session. The average daily attendance in the country is 67.6 per cent; in the city, 79.3 per cent. The school year in the former is 137.7 days, and in the latter 184.3 days. Conditions vary in different sections, but the rule runs true throughout the United States. City children, of course, usually live near the school building and have abundant means of cheap transportation when it is necessary to go any distance, while country children are widely scattered, and often with no means of transportation over poor roads. During long periods of bad weather they can not go at all. These conditions are perfectly obvious on the surface, and militate powerfully against the best education for rural children. Results are reflected in the higher percentage of illiteracy in country districts.

Educational results are largely determined by the quality of teaching. A study of urban and rural conditions on this score is strongly in favor of the city teacher. Country schoolma'ams serve, on an average, only about one year, against the average of 12 years on the part of the city schoolma'am. In the one case school-teaching is treated as a temporary expedient—a stepping-stone to higher education or some other profession, and often to marriage; in the other, it is regarded as a permanent career. It requires no argument whatever to demonstrate which condition is favorable to the child.

Salaries have something to do with the matter. These are considerably higher in town than in the country. This condition is governed somewhat by the inexorable rule of overhead expenses. It is the large school that can afford to pay the highest salaries because the expense is divided among many more individuals; consequently the higher rewards are held out by the larger schools, which are invariably in centers of population. Urban conditions are also much more favorable to the careful and thorough grading of schools, and the old-fashioned, one-room school can not begin to offer so much to the child as the graded school. Not only is the teacher overburdened with work in the one-room school, but she has no opportunity to specialize and become highly expert in any single department of her work. Here, as elsewhere, the whole trend of our times favors the modern art of specialization; and this is a forbidden art for the country teacher in many instances.

For the same reason vocational training, which has

become one of the most valuable features of modern education, is difficult, or impossible, in all except the highest types of country schools. On the other hand, it is readily within the reach of the city school, with its large attendance, good salaries, and opportunity for careful grading.

Investigation has disclosed a pitiable lack of library facilities in many rural schools throughout the United States, including some of the most advanced and prosperous agricultural sections. Many instances were found where the total library stock did not exceed 50 to 100 volumes, and where these were unchanged for so long as two or three years. City school libraries are far more adequate and enterprising, and they are supplemented by great public libraries which are open to the children.

The same influence necessarily governs the character and extent of school buildings in the city and country. The Little Red Schoolhouse is picturesque, but frequently uncomfortable, inconvenient, unsanitary, and at least a generation behind the times. City school buildings, on the other hand, are generally the object of the greatest pride—often of lavish expenditure, and sometimes the last word in architecture, convenience, beauty and sanitary arrangement.

One reason that great numbers of men and women have left the country and gone to the big centers of population is because they are thereby enabled to give their children a far better education, and hence a better start in the race of life. It is idle to deny the facts, and equally idle to argue against the parental instinct that demands the best for its offspring. The



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FRANKLIN K. LANE

Who fought for a great American Policy of Home-building on the Land, and whose ideals—certain to prevail in time—will enrich the lives of Future Generations.



remedy lies in frank recognition of the fact, followed by fundamental and far-reaching changes on the side of country life. If such changes can not be made—if the child reared in the country must be denied his rightful chance for a good education and a fair start in life—then country life is damned and doomed, and everybody who can possibly get there will go to the city. This is in full accord with the American spirit. Nothing is more vital to democracy than that childhood shall have its chance—the best chance that money and genius can provide.

If mental development begins in the schools, it does not end there. What are the comparative advantages and facilities of urban and rural people for keeping on with their education and abreast of the times? The city, of course, offers superior opportunities of every sort. And opportunity is all we can offer to any man. There are no statistics of much value to show to what extent the city man is disposed to avail himself of his manifest advantages, as compared with his country cousin. Whether the abundance and accessibility of libraries and reading-rooms, lecture halls, art galleries, clubs, and social organizations of all kinds broaden his mind and enlarge his outlook on life is largely a matter of speculation. It is certain, however, that it is far easier for the average man and woman to make the most of themselves in the way of mental development if living in town than if living under rural conditions as they average throughout the United States.

For one thing, the better class of daily newspapers are great educators, and their circulation is overwhelmingly urban.

A fairer test is the paid subscription list of popular national periodicals—weekly and monthly—since these are equally accessible to city and country subscribers. A representative list makes the following exhibit:

General magazine (low price), 24 per cent rural; 76 per cent urban.

General magazine (high price), 2 per cent rural; 98 per cent urban.

Popular fashion magazine, 38 per cent rural; 62 per cent urban.

Religious weekly, 6 per cent rural; 94 per cent urban.

A famous humorous weekly, 2 per cent rural; 98 per cent urban.

A woman's monthly, 26 per cent rural; 74 per cent urban.

A well-known literary weekly, 25.1 per cent rural; 74.9 per cent urban.

An outdoor journal, 17.6 per cent rural; 82.4 per cent urban.

Famous boys' fiction weekly, 51 per cent rural; 49 per cent urban.

Prominent farm journal, 63 per cent rural; 37 per cent urban.

These figures are based on the Census of 1910, when 53.7 of the total population of the United States was rural—a figure practically reversed by the Census of 1920. Thus the relative discrepancy is larger than the actual. It is worth while to add, as bearing on the relation of big cities to mental activity, that seven of the ten periodicals representing together a wide range of human interest, have more circulation in cities of

100,000 and over than in all rural America, though the big cities had only 22.1 per cent of the nation's total population, against 53.7 per cent for the country districts.

Even in the absence of such a searching national survey and analysis as might be desired, it is perfectly safe to conclude that the cityward trend is *not* unfortunate for society from the standpoint of mental development.

When it comes to studying the relative spiritual development in town and country the wise man walks carefully. It is not a matter to be hastily determined by the weight of the visible evidence, since the things of the spirit are invisible. The highest spiritual expression of which the world has ever heard came from the quiet places in Palestine. And we have the assurance that we shall lose God neither in the desert nor in the crowded thoroughfares of the great city.

"Whither shall I go from Thy spirit, or whither shall I flee from Thy presence?

"If I take the wings of the morning and dwell in the uttermost parts of the sea,

"Even there shall Thy hand lead me, and Thy right hand shall hold me."

But if the measure of spiritual development is organized religion there is no question about the superiority of urban life. There is hardly anything more pathetic than the state of the country church, viewing the subject as a whole. This fact is nowhere more keenly realized than in the councils of the great religious denominations. They have made repeated surveys in selected localities, all pointing the same way. One such survey covering three counties in northeast Mis-

souri showed that 92 per cent of the country churches have pastors on one-fourth time; their average pay, \$108 a year. Nineteen churches had been abandoned—"simply died out."

There is a record of one country church held in a hall (not located in Missouri) that adopted the desperate expedient of introducing one of "Fatty" Arbuckle's slapstick comedies to draw the crowd. (They came, too.) Half the comedy was presented between the minister's "thirdly" and "fourthly," but to get the other half the crowd had to remain until after the benediction. Considered merely from the standpoint of attendance, the plan was literally "a howling success."

City churches, of course, simply because of the concentration of wealth and population, attract the higher pulpit talent; have the finest music, both instrumental and vocal; house their activities in the largest, handsomest and most comfortable structures, often equipped with the latest facilities for social as well as religious functions. In all these respects their advantage over rural conditions is so palpable, so painful, that it need not be dwelt upon.

While the city church has not resorted to the roaring farce to attract an audience, it has sometimes employed moving pictures of sacred or purely educational character, and doubtless with pronounced gain on the side of mental, if not of spiritual, progress.

If the good-sized town or urban center can claim no conclusive superiority in a matter so clearly one of individual personal experience, and if we admit the full force of what Emerson said of his "sylvan dell,"

"When man in the bush with God may meet—"

it is still apparent that the cityward tendency is *not* unfortunate for society, in the sense of spiritual development.

The question of relative financial development under the conditions of rural and urban life, if considered from the standpoint of average earning power and apart from the increment in land values, presents no such difficulties as we found in the matter of spiritual development.

City earnings, at least where labor is organized, are fairly high and tend upward; rural earnings are low and tend downward. In both cases pre-war conditions as to earnings and living costs should be the basis of comparison, since the war precipitated abnormal wages and prices everywhere, and the process of readjustment is not complete and may not be for years.

Between 1900 and 1914 the Federal Government, as well as various States and universities, conducted extensive investigations to ascertain the amount of the farmer's income. One Federal investigation covered ten of the most important agricultural States, including the cotton sections of the South, the grain regions of the Middle West, the dairy districts of Wisconsin, and the diversified farms of Vermont. The official report concluded in these words:

“Extensive investigations relative to the profits of farming indicate that the average labor income of the farmer probably differs little from ordinary farm wages.”

That is to say \$25 a month or \$300 a year. (Labor income, of course, is apart from income on investment,

but the latter is but 3 or 4 per cent in the best farming regions.) Government investigations in three representative areas—Indiana, Illinois, and Iowa—showed an average labor income of \$408. In Indiana it was \$310; in Illinois, \$622; in Iowa, \$291. Cornell University studied some of the most thriving agricultural districts in New York State, with this result:

“The average owner received \$423 as pay for his personal labor and management for a year; but there were wide variations from this amount. The common wages of a hired man in this region (pre-war) are \$300 to \$350, with house rent, garden, wood and milk. Some of the men receive more. Roughly speaking, we may say that one-third of the owners made less than their hired men, one-third made about the same as the hired men, and one-third more than hired men.”

Practically the same results were found in the case of tenants. Whether owner, tenant, or hireling, the man on the land receives about the same pay for labor. The average capital requirement for a 160-acre farm in Indiana, Illinois and Iowa was found to be \$30,606—more than most men possess, or will ever possess.

Diligent search has failed to reveal any figure as a basis for comparison of average urban income with average rural income. The income of urban people, of course, taking all elements into account, covers an immense range. Somewhere between the depths of poverty and the heights of affluence lies the sea level that one would wish to find on this side of the subject, as we found it on the rural side.

There is very good reason for saying that the aver-

age American income for 1917, taking every man, woman and child engaged in gainful occupations, falls somewhere around \$1,250. This average means comparatively little for our purpose, which is to ascertain the economic situation of the millions who left the farm to engage in city life. If comparatively few of them are in the millionaire class, probably hardly more are among those receiving the poorest pay. They were largely made up of the young, energetic and ambitious, equipped with a fair degree of education. They deliberately set out to improve their situation in life. To a large extent they are skilled mechanics, trained office people, small merchants, or professional men or women.

A careful survey of 2,000 families in Chicago, taken at random from the city directory, gave \$1,500 as the commonest household income. My own guess (and it is only a guess, from which the reader may dissent), is that the income of the element we have especially in mind averages somewhat above rather than below that figure.

In the absence of such complete data as we would wish, the best we can do is to say this: The farm worker's labor income is \$350 a year, plus rent, fuel, milk and vegetables. Let the city reader add the cost of those four items to \$350, then subtract the sum from his total income, and he will be able to compare his own economic lot with that of his rural brother. Probably it would not be far wrong to say that the sum so obtained would average about \$1,000; nor to deduce the conclusion that the average city man is ahead by anywhere from 50 to 100 per cent.

If that be true, then it becomes quite clear that the cityward tendency is *not* unfortunate for society, from the standpoint of financial development.

Now we pass right out to sea, so far as any hope of exact information is concerned. Of health, physical, mental, spiritual and financial development something may be learned from public records, though such data is by no means as comprehensive as could be desired. It is different when we come to consider the other elements of our problem—the effect of the sweep of population away from the land on the character of our people with respect to human kindness, social solidarity, patriotism, capacity to think clearly on public and social questions, initiative and ability to carry out convictions, and, finally, joy of living.

These are vital considerations. They go to the heart of our future civilization. They are closely related to the matter of education and economic prosperity, since there can not be much doubt that a more general diffusion of knowledge and the comforts of life must react favorably on the character of individuals and communities. Then, too, there is the influence of environment—of contact with large numbers and with varied racial and social groups—to be taken into account.

The questions of human kindness and patriotism may be considered practically as one. Like spiritual development, they are largely matters of individual temperament and personal experience. It would be a very bold man who should undertake to say that rural life is deficient in either of these fine qualities of human character. Indeed, on the side of kindness, there is a great

deal to be said in favor of the neighborly relationship that prevails in the countryside as compared with the conditions of city life where a family scarcely knows the people in the next house or the next apartment, while those in the next block are as alien as the people of San Francisco or London to the people of New York.

As we found with religion, the case is only clear as it pertains to organized effort. If the city answered more generously to Mr. Hoover's clarion call on behalf of the starving children of Europe, and contributed more largely to the needs of famine-stricken China, it was not because its population is inherently more charitable, but because it is far more readily "get-at-able"; hence, more responsive to the "drive." But—

What is the effect of such an influence upon the city people? Do they, as a class, acquire the habit of giving freely? Do they thereby become more tender toward suffering humanity? They hear great speakers appealing to their sympathies and exhorting them to noble performance; they absorb the same spirit through their daily newspapers; they breathe an atmosphere of organized mercy for the unfortunate; they are surrounded by public institutions that make every helpful provision for the weaker members of society. Do they thereby develop the quality of human kindness? And when the same potent influences are directed into patriotic channels, do city people respond with increased love of country? On the other hand, does the lack of such intensive cultivation tend to reduce benevolent and patriotic impulses in rural districts?

This branch of our inquiry is purely speculative; in the nature of the case, it provides no statistics. The

unquestioned fact that the city is the more liberal contributor to popular funds of all kinds would be true, if for no other reason, because wealth is concentrated in urban centers. It is quite certain, however, that there is nothing on the surface to indicate that the cityward tendency is unfortunate for society from this point of view.

The question of social solidarity almost answers itself. If anything, the fabric of urban life is rather *too solid* as a whole, and more so in its group segregation. If it is desirable, as often it is, to evoke the sense of community interest and develop community action it is more readily accomplished in the town of 2,500 and up than in scattered rural districts.

Who think more clearly on public and social questions, city or country people? And which environment is more favorable to initiative and ability to carry out convictions? These questions, while not precisely similar, run on parallel lines. Both turn largely on mental alertness and range of information. If town folk live, on the whole, a larger and fuller life, coming more closely into contact with public questions and economic phenomena, is it not in them rather than in rural folk that we should logically expect the greater manifestation of intellectual activity, the clearer vision of social progress, the freer play of human feeling, the readier welcome to innovating thought of every kind? A study of new progressive movements in all departments,—if records were available, as they are not—would almost certainly show that they came, as a rule, out of the ferment of city life.

As to individual initiative and the power to carry

it out, I happen to have seen it put to the test in the course of western development a number of times. Great changes have come in western methods of life, including life on the land, during the past forty years. Old industries have been revolutionized; new industries created. So, also with the institutions of social and civic life. And almost without exception leadership has come, if not from the city-born and bred, at least from the city-trained. These men brought keen minds, sharpened on the city grindstone. They brought a brood of new ideas that, in the view of the resident rural population, would "never work"; yet, they did "work," broadening the foundations of general prosperity, and adding enormously to the sum of individual and community wealth.

Old methods of irrigation, old kinds of crops, old ways of harvesting and marketing—these were not good enough for the sharp-eyed, keen-brained men who had turned from the fierce rivalries of urban life to seek success on the soil. Neither were the old schools, churches, homes and hotels good enough for them. They craved better things. And, with a swiftness and thoroughness that made the old rural folk gape with amazement, they brought better things to pass. And, along with their progressive horticulture, they took large doses of progressive politics.

Without the support of statistics (dry at best, and often misleading) but with faith founded on wide observation, I can say that human initiative loses nothing from urban experience.

Finally, we come to the interesting and vital question: Which is better for the average person, the country

or the good-sized town, from the standpoint of mere joy of life? Apart from all other considerations, do the millions who have left the countryside to make their homes in towns, especially in the big modern cities to which the larger portion have gone, get more satisfaction for their social instincts, more downright enjoyment out of the every-day experience of life, in consequence of that change?

The mere fact of the steady and ever-growing trend in that direction goes far in the way of an affirmative answer, because, after all, happiness is the great desideratum of human existence. All the other factors in our problem—health, earning power, mental and spiritual development, and so on—are valuable as they contribute to the one great end, which is the joy of living.

From the standpoint of interest and variety, the thrill of the great town is by no means imaginary. More and more with every passing year civilization masses its choicest things, along with its worst, in the big centers of population. Its energies and capital are bent upon making the life of the city an even more irresistible magnet than now. There are no bounds to the municipal ambition. Science and art and endless millions of dollars minister to that aspiration, which yearly becomes more real.

Consider the people's playgrounds, and, to make it concrete, one of the most adorable creations of municipal genius achieved from what once seemed the most unpromising raw material—Golden Gate Park in San Francisco.

Nature made it a desert of shifting sands; man con-

verted it into a paradise of beauty, comfort and utility. To-day it is the joy of the multitude; the pride of a great democracy; the meeting ground where all social distinctions disappear for one blessed day in an atmosphere of universal good will, for these lawns and flowers and trees, these smiling lakes and winding roads, these Dutch windmills, ponderously turning with the Trade Wind, these effigies of the great, holding the precious Past in firm hands of bronze, these wonders of the world's zoology, these museums bursting with the treasures of Art and Science assembled from the far corners of the earth—these belong to all, to our common humanity, as much as the sky that bends above them, as much as the sunshine and the tonic air.

And this is wealth, spiritual wealth—the very bread of life!

Go there for the band concert Sunday afternoon and sit on the comfortable benches under the trees with ten thousand enthralled music lovers about you—other thousands within hearing on the wide lawns. The Municipal Band, backed by a massive sounding board, faces the throng. Over them, two great flags unfold in the breeze. You see them, and you are thrilled—they mean so much! One is the starry flag, planted on the western border of the Republic; the other, the glorious Bear Flag of California. You think of the Argonauts—yes, and of San Francisco, the city that rose on stepping-stones of its dead past in three brief years, meanwhile singing a song of “The Finest Ruins.”

The golden hours pass in an atmosphere that may only be described as one of genuine spiritual exaltation. You are lifted out of yourself, out of the sordid things

of every-day life; you are thrilled through and through. Is it the music? The setting? Not wholly, though both are fine. More than anything else, it is the presence of the multitude, of massed humanity. It is the subtle expression of the gregarious instinct, colored with a consciousness of the divine.

My point is that the experience is possible only to urban life. It requires people, masses of people; it requires money, millions of money; it requires lofty idealism, based on deep concern for the common welfare and happiness. And these impulses, I insist, are the product of organized municipal life, rather than of the unorganized and severely individualistic forms of a rural life that is passing away. Let it go—the sooner the better!

I have touched here, it is admitted, on a high point of city life, which is by no means one long Sunday in a park with band concerts. That, however, is but a single feature of a way of life that is replete with attractions appealing to the spirit; with deep satisfactions for the hearts of average men and women.

The big department store is about equal to the old county fair as an entertainment, and considerably more up to date. Theaters, restaurants, lectures, movies, occasional great pageants—even the frequent thrilling passage of fire engines through crowded streets—add to the zest and charm of life. Those who can spend freely get the best of it, perhaps, yet everybody drinks at the fountain of city life. Even to mingle with the throng is somewhat satisfying, for we resemble “Helen’s Babies” and like to “see the wheels go ‘round.” The

poorest can see the swift revolutions of the city wheels. As a penniless derelict remarked: "Anyhow, I can read the billboards and see what's going on!"

There is, of course, a very charming side of rural life, and one that must be preserved if civilization is to remain sweet and wholesome. But millions have turned away from it. "The proof of the pudding is the eating thereof." Millions born to country pudding have shown their marked preference for city desserts.

No man of our time has done so much to keep alive true love of country life as Ray Stannard Baker, or "David Grayson," as he delights to call himself in his rural moods. He happens to be one of my most valued friends, and I shall later make use of his actual experience to demonstrate my own philosophy of the coming life on the land.

We have now examined the relative advantages of urban and rural life from a number of different standpoints. Our finding is in harmony with the obvious drift of the times. From the Census of 1830 to that of 1920, the race between country and town as rival claimants for the favor of a majority of our people has gone ceaselessly on. Decade after decade the city has rushed ahead, the country fallen back, until by the latest count the supremacy passes to the city. A majority of our hundred million people now dwell in town.

Why? Because—

A man can make more of himself in the city than in the country; can earn more money; do better for his children; live in better surroundings; drink deeper from the cup of human happiness. The city draws into its

insatiable maw the best of all the country produces—men and food alike.

But let it be understood that in all I have said I am speaking of rural life *as it is*, not as it *might be*—not, please God, *as it shall be*.

CHAPTER II

THE LEADING OF THE FALSE GOD—"PRODUCTION"

A NEW view of the decline in American rural population, and the continued piling up of the people in urban centers, has begun to gain currency. It has found able spokesmen. One of the most persuasive is Dr. Rudolph M. Binder, head of the sociological department of the University of New York. In a very notable interview, he said: "America only is following other industrial countries in its tendency to group the larger number of its inhabitants in the cities.

"In Belgium and in England this period was passed long ago; Germany knew it about 1910. It is the inevitable drift of all States undergoing transition from agricultural to industrial conditions.

"Normally every country must keep a sufficient percentage of its population in the rural districts to provide enough food for the whole population. This percentage varies according to the state of civilization of a country. In the province of Bengal, India, there was until recently 90 per cent of the total population in country districts.

"Those people, because of primitive implements and transportation, were able to produce just about enough food for themselves. England, at the other extreme, is able to maintain approximately 8 per cent of her people in urban districts.

"In our own country we have had a preponderantly large percentage of population in the country districts as long as means of production were comparatively simple.

"With improvements of implements a smaller percentage of people was needed to produce food for the whole population. This percentage has grown smaller with development of implements, latest of which is the tractor. It has been figured that whereas production of a bushel of wheat once took two hours, the time in 1920 was reduced to eight minutes. I venture to say that time now is shortened by half.

"It is interesting to note notwithstanding over 51 per cent of our people lived in urban districts, the largest bumper crop in our history was produced last year."

In his statement, which disposed of any "back to the farm" movement as impossible, Dr. Binder said if those thrown out of their jobs in the fields by highly developed machinery should attempt to remain in rural districts, producing crops far above the demand, prices would be forced so low that farming would cease to pay.

He went on:

"Our capacity for consuming food is limited. But our capacity for consumption of manufactured articles, such as erstwhile farmers turn out instead of vegetables and fruits, is practically unlimited. Three or four square meals a day is our limit, but we may change our coats a dozen times! We may eat only a dollar's worth of food daily, yet we spend a thousand dollars for a single table!"

About the physical aspect of the cityward movement, Dr. Binder had this to say:

“Time was when the city seemed a regular graveyard for her beings. But hygiene and sanitation have been introduced; statistics of the recent war proved that our city boys are equal to the country product in vitality, while surpassing them in mentality.”

With his statement concerning the physical and mental results of urban life I am, of course, in perfect accord; it is precisely what we found in the preceding chapter. But, with the rest of his statement—both as to spirit and as to facts, but especially as to spirit—I profoundly disagree.

First, the facts: Machinery is relied upon to make good the deficiency of man-power on the farm. America has long had the advantage of superior agricultural implements and machinery; and, as a consequence, leads the world in production *per man*. But she lags far behind in production *per acre*, possibly because the machine can not quite take the place of the man in getting the soil to do its best. In other words, we may be dying on the land economically, as well as socially and spiritually, because of an overdose of machinery. At any rate, until labor-saving devices bring our per-acre production much nearer the European standard than it is now, we cannot safely disregard the constant loss of man-power on the land and rely on machinery to take its place in the vital matter of food production.

We saw that Michigan lost 46,000 men from her farms in two recent years; that she now has an average of only eleven men and boys for each ten farms. Is it certain—is it even conceivable—that machinery has

been invented to perform all the varied farm tasks formerly done by those vanished hands? Even if so, are there men and boys enough left to run the machines? May not Michigan, like Massachusetts, soon have less rural people than England, with the 8 per cent that Dr. Binder regards as the hall-mark of her civilization? And, by the way, England would soon starve without the food that flows from her overseas dominions—the flow of which Germany nearly stopped with her submarines. The cost of her enormous Navy is part of the price England pays for the glorious privilege of agricultural isolation.

We saw that in one short year Ohio lost 30 per cent of her men and boys from the farm, while the number of habitable farmhouses increased 61 per cent. At that rate, another two years would leave her farms practically bare. Who will buy and operate the machinery when there is literally "nobody home"?

In three of the six years from 1914 to 1920, despite the enormous stimulation of war prices and wages, per-capita production fell below the pre-war period; and we had more and better farm machinery in use than ever before. The area of land in cultivation in the entire country in 1921 is 5 per cent less than in 1920; a rate of decrease which would wipe out American agriculture in 20 years.

The average annual increase in population is 2 per cent; our total area of cultivated lands (1920 Census), 478,451,750 acres. On the basis of present production per acre it would be necessary to increase the area of cultivated lands 6,369,403.17 acres every year; or, 17,450.41 acres every day, in order to main-

tain our total agricultural output at its present standard. If the nation is to go on growing, while the farmers continue to abandon their fields for the crowded streets of the city, it is obvious that the inventors and manufacturers of machinery that is to supplant the human race must work overtime.

The child-like faith of those who declare that machinery may safely be relied upon to feed our people and sustain our export trade is buttressed by no facts and figures. It is not thus with the friends of reclamation and land settlement—the champions of the three-century-old policy of continental conquest that made America what it is to-day. One of the most enlightened of these champions, Douglas W. Ross, C. E., has recently said:

“Assuming a rate of increase of 15 per cent per decade for the next 20 years, as against 16 per cent for the one just ended, and 21 per cent for the one next preceding, the population of the United States will be about 140,000,000 by 1940; and assuming an increase of 25 per cent per decade in our urban population, which is considerably less than the average since 1900, about 60 per cent, or 85,000,000 of these people will be living in towns and cities, with 55,000,000 in the country—an increase of less than 4,000,000 in the present rural population.”

And Mr. Ross estimates that merely to maintain the present balance of urban and rural population, as disclosed by the latest census, will demand 130,000,000 new acres of cultivated land in the next 20 years.

Mr. Sheldon S. Cline consulted the highest authorities of the Department of Agriculture at Washington, in

February, 1920, asking such searching questions as the following:

“Is the great industrial structure which America is erecting in danger of toppling over because there is not beneath it the foundation of an adequate and assured food supply?

“Must the cost of living mount higher and ever higher because farm production is diminishing, while the population of cities and industrial centers constantly increases?

“Is the time approaching when the United States must depend upon overseas imports of staple food-stuffs, and, therefore, be at the possible mercy of an enemy in war?

“Is it possible, in short, that this country may know that fear of famine which always has Europe in its grip, and which was one of the chief underlying causes of the greatest of all wars?”

Never before were such questions asked in respect to America. A few years ago they would have convicted any journalist of mental incompetency. To-day they are seriously entertained by those whose fingers are on the pulse of American agriculture, and who have begun to count that pulse, as a physician counts the pulse of a very sick man.

Mr. Cline was told that for the first time in history “America sees the approach of a condition like that which has kept Europe in agony for a century—the pressure of population on food supplies; that while we are yet unconscious of it, and still less of its causes, it has started gnawing at our vitals, and in the absence of a remedy, will spread rapidly.”

The conclusion reached by the highest Government authority is that, allowing for all the machinery and improved methods we have or are likely to have, another 15 years will see America absolutely dependent upon the outside world for food. To quote Mr. Cline:

“Fifteen years is the period of grace given us, unless conditions change materially, before we will become dependent upon overseas imports of bread and meat and other staple foodstuffs.

“Fifteen years before the peril of famine may hang like a black shadow over the land!

“Fifteen years before keeping the ocean-ways open to our food ships may be vital to our national life, calling for armaments which would be an ever-increasing burden!

“And it is fifteen years we have in which to evolve and put in operation an agricultural policy which shall save us from the fate of Europe.”

Fifteen momentous years, big with the fate of American civilization!

So far as the *facts* are concerned, the answer to the new school of thought that sees nothing unfortunate in the rotting away of our rural foundations, is that they are *not* facts. Even from the standpoint of production, machinery is not now making good the loss of man-power on the farm; machinery is not now providing a barrier between our people and prohibitive cost of living; machinery is not now preserving the nation against the danger of dependence on foreign food supplies within the next two decades. In the judgment of those who are in the best position to form

an intelligent opinion, the day is remote when machinery will be equal to these demands. Those who hold the contrary view represent a mistaken and dangerous philosophy. If it became prevailing public opinion, it would speedily create a greater menace to America's position in the world, a greater menace to the continued independence of her people, than hostile fleets lying without her ports, or hostile armies marching across her soil. We should overwhelm the fleets and defeat the armies, but an influence that undermines the character of our citizenship is an influence which, if permitted to work out to logical conclusions, would destroy the basis of our free institutions. And that would be the end of America as it exists to-day.

Those who feel otherwise are following a false god—the god of Material Production. Wrong as to their facts, they are infinitely more so in the spirit of their contention, which would sacrifice all other good to a single consideration. They would fill the nation's stomach at the cost of the nation's soul; though not, of course, with conscious intent. They have convinced themselves that the people can be fed by machinery, while everybody lives in town, wearing "a dozen coats a day," and dining from "\$1,000-tables." How average folks are to get the price of the coats and tables—whether by socialism or not—they fail to state; but, if the time shall ever come when we depend on machines for food, it will also be time for the people to resume the ownership of the land and to acquire the ownership of the machines. On no other terms could democracy survive in America.

Production is not the first, but the secondary con-

sideration in any properly conceived scheme of life. The first consideration is the independent home on the land, which may, or may not, be a farm home. The point is that we want a landed citizenship, rooted in the real proprietorship of the country, and bound to it by the strongest ties of interest and affection. The loss of the family hearthstone carries a deep menace to the future of our institutions. Under the leadership of the false god, Production, we are going fast and far in that direction. This tendency should be reversed rather than encouraged.

True, we must be fed; but man does not live by bread alone. It is neither wise nor necessary that we should be fed under a system of agriculture that destroys the home on the land, abolishes popular proprietorship, creates a nation of tenants, cripples individual initiative, shackles the spirit of family independence, and degrades the character of our citizenship. These are the swift and sure consequences of rural depopulation on one hand, and the growth of congested cities on the other.

It by no means follows that machinery can be ignored as a factor in agricultural production. Doubtless inventive genius will go forward in that field, as in all other departments of civilization. Whatever it can do cheaper and better than human hands, machinery will do in the future, as in the past, and on a constantly expanding scale. But, at whatever cost, it must be made subordinate to the higher good of humanity, as we shall see in subsequent chapters.

We have entered upon a critical period in American history, and in nothing more so than on the side of our

rural civilization, to which the institutions of our urban life are now closely related. We can follow no farther the false god of materialism, as represented by the complacent philosophy which subordinates all the other interests of society to the one thought of production, without imminent peril to the most precious ideals of American life.

What profiteth a nation, any more than a man, to gain the whole world and lose its soul? And that is the stake—the *soul* of America—embodied in the homes of her people, with all the elements of human freedom, of social welfare, of intellectual and spiritual growth, that cluster about the family hearthstone.

CHAPTER III

"A PLAGUE ON BOTH YOUR HOUSES"

THE truth of the matter is that neither rural nor urban life, as now organized, meets the test of American ideals, as mentioned in the previous chapter.

We have seen how rural life, speaking broadly of average conditions throughout the nation, fails to meet the test. It fails alike on the economic, the social, the intellectual, and the spiritual sides. In all these respects it must undergo a thorough, though doubtless gradual, process of reorganization before it can measure up to the highest ideals of Twentieth Century America.

City life, and especially the life of the great city—again speaking in broad terms—supplies a more interesting experience, and yields more satisfaction to average humanity. Yet, the city, too, falls very far short of meeting the highest test. With all its advantages in the way of scientific hygiene and sanitation, of schools, hospitals, public parks, opportunities for recreation and amusement of every sort—it yet fails, when considered from the standpoint of ideal American citizenship.

What we want is the largest measure of individual freedom consistent with the general progress and welfare of society. This high element of citizenship is

more and more imperiled by the conditions of urban life.

Almost everybody lives in rented premises, paying tribute to a landlord, and becoming the victim rather than the beneficiary of the increment in land values their presence creates. The widest possible diffusion of home-ownership is one of the essentials of a wholesome national existence. City life, as now organized, holds out no hope in this respect. Already, in some of the greater cities, 95 per cent of the population is utterly landless; and, in the sense of any security of tenure, utterly homeless. It is a condition that strikes at the roots of human freedom.

Almost everybody works for wages, and is thus dependent on the enterprise, the life, the fortune—even the whim—of some one else, for a means of livelihood. This also is a condition which makes against freedom, even in the days of youth and strength. When middle age is passed, and old age begins to loom upon the horizon, the carking thought of uncertainty for the future becomes like “the pestilence that walketh in darkness; the destruction that wasteth at noonday”; a veritable “terror by night.”

There can be no true freedom, no abiding happiness and content, without some measure of security of life. The family that does not own the roof over its head; that has no control of the occupation, or employment on which it depends for daily bread, is living in a state of insecurity, and facing an unknown future. Such is the condition of a very large proportion of all of the millions that have been absorbed by the resistless forces of city life. Let the cup of their daily enjoyment be

never so full, these bitter dregs lie at the bottom of it.

The average urban family is entirely defenseless against rising living costs in the matter of rent and food. Rent is based on land values; land values rise with increasing population. The price of food is closely related to the growing disproportion between consumers and producers, resulting from urban congestion.

Completely detached from the soil, with a long line of transportation agencies and trafficking middlemen between the farm and their own tables, the swarming city populations stand as helpless before the cost of living as an unarmed mob before an army of professional soldiers, trained and equipped to the minute. They can only pay the price or go without. Every element of the problem lies far beyond their reach.

These are not the only drawbacks of city life. It tends to wither, if not to destroy, personal initiative, just as it hampers and limits the spirit of individual independence. While it is doubtless true that the city offers many interesting tasks, and opens the door to many channels of promotion, it is equally true that the vast majority of workers in factories, department stores and offices, feel the deadening effect of a merely mechanical routine. They are cogs in a big machine, often dealing with only a very small portion of the process that goes on in the establishment as a whole.

To shake them out of this lethargy, born of the steady tramp of factory, store and office drill; to restore their initiative, and with it their creative faculties; to stir the passion for new adventure; to give them a measure, at least, of individual independence, a measure of control over their cost of living; to make

them proprietors of the ground on which they dwell, instead of mere tenants at will—and thus the beneficiaries, rather than the victim of land values created by the presence, the labors and the investment of society as a whole; to do all this, while enabling them still to retain the unquestioned advantage of city life, including their hold on the payroll—this is the inspiring task that awaits the genius of American citizenship.

This, too, is the logical beginning of a process which, before the present century shall have passed into history, will effect a far-reaching transformation in the whole rural life of the nation. For man's passion for the soil is to be born again. He is to revive his primary love of nature and all its works; to renew his companionship with Mother Earth, and thereby to renew, to broaden, and to sweeten his own existence.

As in the past half-century the country has been the nursery of the city, so in the next half-century, the city will be the nursery of the country. The movement will not be "Back to the Land," but *Forward* to better things than men have ever known in the past. Production, important as it is, will be merely incidental to the evolution of higher forms of social and economic life, with a great deal of emphasis on family life—its hearth-stone restored; its altars relighted.

These things will come to pass, because they are essential to the preservation and continued development of democracy in America.

CHAPTER IV

GETTING THE RURAL SAVOR INTO CITY LIFE

I wish you joy of this and that;
The new look from a path's quick turn,
The sunshine on the long home street,
The unexpected fern;—
I wish you power to draw delight
Because a bow blows so—or so;—
I wish you joy of everything—
Of all the living, singing lands,
And of the smiling, sleeping sky
That no one understands—

Zona Gale.

TURNING now from the negative to the positive side of our subject—from the god-of-things-as-they-are to the god-of-things-as-they-ought-to-be—let us consider to what extent it is possible to put country scents into city air. Our quest is for a way of life that may be brought within reach of the multitude, giving them a richer and fuller experience than they now enjoy. It must be an experience comprehending more than creature comforts; more, even, than social satisfaction and intellectual opportunity. It must square with the great ideals of American life.

Now, there are some people in this world so fortunately circumstanced that they determine their own way of life; they do as they please. Often they happen to be people of taste and refinement, blessed with a liberal education, since those advantages naturally

go with large means. It will be interesting, and perhaps illuminating, to inquire what such people have found to be the ideal way of living.

Up to a generation ago, this element largely preferred the city, with a strong leaning toward brownstone fronts. Their summers were spent at great resorts, in hotels or rented cottages. They were of the town, townish; and almost wholly lacking in rural affiliations of any sort. But, in the last two or three decades, the mental attitude of the extremely well-to-do has radically changed. It happened about the time we began to build good roads, run automobiles, and develop other means of rapid transit. These well-to-do people then discovered a new love of rural life. To have a country home then became the proper thing. In many instances the city mansion has been disposed of, or torn down to make room for a skyscraper or an apartment house, and the place in the country has become the real home of the family, which retains in town only an option on desirable hotel rooms, or possibly an apartment among the cliff-dwellers.

These comfortable folk, who do as they please because they have the price, have decided that the way to achieve the utmost satisfaction is to be *of* the city, but not *in* the city. They are distinctly metropolitan in their business interests, and in a part of their social interests, as well; but they have learned that the way to get the most out of the city is to come to it each morning, after a restful night among the sights and sounds of the country; and that the way to get the most out of the country is to go to it each night after

a strenuous day in town, to discover its beauties afresh, with a little shock of joyful surprise.

My proposition is this: If that is a good thing for some of the people, and particularly for those who can have the best there is in life, then it is a good thing for vastly more of the people who would do it if they could. And to make it possible for them to do it is a part, and a very urgent part, of the job awaiting the builders of America.

It is perfectly true, of course, that there are many who would not care for that sort of thing. Herbert Quick has given us an exceedingly serviceable phrase, when he speaks of the "city-minded" and then of the "country-minded." I venture to say that few people realize to what extent the country-minded predominate among the dwellers in great cities. They are legion—these men and women who turn wistful eyes from dens in office buildings, from caves in apartment houses, toward the open spaces—dreaming that some day they will have a little home of their own. They send for seed catalogues—and dream; attend poultry shows—and dream; observe fat squabs in the market—and dream; make furtive sketches in idle moments of un-built cottages and unplanted gardens—and dream. Some of them, but by no means all, came originally from the country, and look back lovingly to the scenes of their childhood. Whether country or city bred, they all thrill to the thought of the vine and fig tree, of the family hearthstone that survives the mutability of the years. The thing is in the blood of the race. It is primal instinct, of which men are daily reminded by

their metropolitan environment. To walk the pavement is to think of pressing the turf. To get a glimpse of sunrise, or of the reddening evening sky across the waste of city roofs, is to dream of the place where the whole glorious spectacle is unfurled to them who have eyes to see.

Yes, the country-minded constitute an innumerable caravan in all the big cities of the land. If, like the people in easy circumstances, they could do as they wish, they would take the cream of the city and the cream of the country, leaving the skim-milk for those who like that sort of thing; or, perhaps, can do no better. They are withheld from the satisfaction of this natural instinct almost entirely by economic considerations. They are attached to the city payroll and would not dare to let go. Neither have they the capital nor the genius for organization requisite to attain the better way of life.

Municipality, State and nation know there is an unsolved "housing problem." They do not know that there is latent in the hearts of men a desire and a spirit that would cover the earth with genuine homes if it could but find inspiring leadership. But this is getting ahead of our story.

"David Grayson"—as I have hinted in earlier pages—is the voice of the landless multitude pent up in city quarters, converted into something approximating human jam twice each day, as it goes to and from its work on street-cars, yet ever dreaming of the joys of the countryside. No man since Thoreau has done so much to put spiritual vision into the common life in relation to rural experience. He is, however, not a

type of rural citizenship, but a luminous example of that rich and satisfying blend of city and country life that is the essence of what I am saying. He divides his time between New York and Washington, London and Paris, on the one hand, and, on the other, his dear little farm in the Connecticut Valley of Massachusetts.

It is my theory, and also my conviction, that his home in the valley would not seem half so sweet, nor his senses half so keen, if he did not come there from the noise and bustle of the town to hoe a row of corn while listening to the music of the birds and breathing the incense from the earth; to walk beneath the shade of his trees; to smile, as he hears the cackle of the hens, or the cheerful munching of the old mare at her meal; to chat with Harriet on the porch, or drink from the brook before he sits down to stretch his legs. "There is a poem in stretched legs," he tells us. That is a poem, I think, born of Broadway, as much as of the corn-rows and the new ditch across the meadow. I insist upon full credit for Broadway!

Let me drive it in, because it is a vital point: Without Broadway, the valley farm would not be the joy it is; nor would Broadway be so interesting, so significant, without the valley farm. This is the verdict of the fortunate who may do as they choose. Is it not, then, sound gospel for the rest of us?

To take another example: A big New York business man wrote a magazine article that attracted wide attention, though the theme, "Farming vs. Golf," seemed simple enough. He had been in the habit of playing golf (and naïvely insists that he was a pretty fair

player, too), but when the War came on it suddenly occurred to him that he might discover a form of exercise of more creative character—possibly a more valuable contribution to his country's need—than poking little white balls across a field.

He bought an abandoned farm in the hills of Western Connecticut and proceeded to raise food for his family and the public. He tells us that his entire investment was not much in excess of the entrance fee required by one of the exclusive golf clubs near New York; yet the abandoned farm turned out to be a paying investment. That, however, was the smallest of his satisfactions. He turned over a new page in his experience. He was like the colored girl, who, speaking of the dinners provided by her young man, said: "He found an appetite on me I didn't know I had."

The successful man of large affairs became an enthusiastic farmer. He went after the record as to quality and quantity of his crops, and returned from the county fair bedecked with blue ribbons. He found, moreover, better exercise and more mental diversion in reclaiming these abandoned acres than he had ever known on the golf field. He discovered that there was no such food as the food of his own raising; and while he spends many months of the year in his city home, even there he is followed by a stream of fresh eggs, milk and fat chickens, vegetables, fruit and preserves, from the farm. Listening to him as he talks, one would think the home in the Connecticut hills the main object of his existence, and the great business over which he

presides, with its branch houses in several American cities, as well as in London, Melbourne and Bombay, only a secondary consideration.

His magazine article struck a responsive chord in many hearts, and brought him many letters of appreciation, one of which I wrote from my office in the Department of the Interior at Washington. Probably this book would not have been written at this time except for that incident, which is my excuse for the following quotation:

“Your philosophy has a distinct bearing on the garden city plans we are considering here. The number of persons who can purchase and improve abandoned farms, and give them the necessary attention, is comparatively small, and I fear it always will be; but the home-in-a-garden which we have in mind, where the man will own an acre or two of ground and be shown how to make the most of it by intensive means—applying not only to the soil but to various kinds of livestock—will enable multitudes to take your prescription of good, useful and productive work instead of play.

“The people to whom I refer are probably not golf-players now, but they are in need of rural experience, and hunger for some touch of the open spaces.”

He thought it good philosophy and called for a program. I answered: “It would take a book.” He retorted, “Then by all means write it.”

Our problem, then, is to get the rural savor into city life; to open the way to homes on the land for the multitude of our country-minded now living within

city walls; to bring within reach of all who desire it, the experience of David Grayson and of our New York business man. The limitations as to capital and leisure mentioned in my letter must be kept in mind. It is clearly a job of social engineering.

But—it *can be done!*

CHAPTER V

THE INVISIBLE CITY OF HOMES

These are the things I prize
And hold of dearest worth:
Light of the sapphire skies,
Peace of the silent hills,
Shelter of forests, comfort of the grass,
Music of birds, murmur of little rills,
Shadows of clouds that swiftly pass,
And after showers
The smell of flowers
And of the good brown earth:
And best of all, along the way,
Friendship and mirth.

Henry Van Dyke.

HOW does it happen that all of our cities are surrounded by a wide belt of nearly vacant land, which, if used at all, falls far short of its best possibilities? True, the city must stop somewhere, but why should it stop short of the genuine rural district? Possibly it is an illustration of the law laid down by Julius Seelye: "In truly living institutions, the instinct of development is wiser than the wisdom of the wisest."

These vacant areas have been waiting for something—for something more valuable than the old order of rural life; more valuable, too, than congested city life. They have been waiting for the Era of the Garden Home. Even now, those vacant spaces constitute the City Invisible.

The practical explanation is, of course, that such lands have become too valuable for farming because of their proximity to large population, and are held out of use in anticipation of urban expansion. The more their value diminishes for the one purpose, the more it increases for the other. That there is an intermediate use which in its practical outworking restores their productive capacity, while still reserving them for the possible future needs of city extension, is a truth that has escaped the sharp-eyed real-estate fraternity in most localities, though not in all, as we shall presently see. As a means of reducing the matter to the concrete, let us consider the situation at the National Capital, our beautiful Washington.

Within a ten-mile circle drawn around the Capitol Dome are thousands of acres of good agricultural land, of which the merest fraction has been reduced to intensive cultivation. Much of it is wastefully used; much of it is not used at all. Conditions of soil, climate and water-supply are good, and represent a fair average for the United States. Suburban transportation is a serious problem in some localities, and less so in others, but is being rapidly simplified by the extension of good roads and the increasing use of motor vehicles, both bus and truck.

In his annual report to the President, dated November 21, 1919, Secretary Lane called attention to this situation, and said:

“Somewhere and sometime, it seems to me, a new system must be devised to disperse the people of great cities on the vacant lands surrounding them, to give the masses a real hold upon the soil, and to replace

the apartment house with a home in a garden. Such a system should enable the ambitious and thrifty family not only to save the entire cost of rent, but possibly half the cost of food, while at the same time enhancing its standard of living socially and spiritually, as well as economically.

"It has been suggested that there is no better place to demonstrate a new form of suburban life than here at the National Capital, where we may freely draw upon all the resources of the governmental departments for expert knowledge and advice, and where the demonstration can readily command wide publicity, and come under the observation of the Nation's law-makers. And I am expecting that such an experiment will be made. Such a plan of community life rather than city life should be extended to every other large city in the Nation."

And he added with profound conviction:

"I put first among the constructive things which may be done by the exercise of the Government's power of supervision and direction, this matter of providing suburban homes for our millions of wage-earners."

In later pages we shall see precisely what is meant by the term "Garden Home." We are going to stand among our fruits and vegetables, listening to the cackle of our fowl, and the hum of our bees, and observing the sleek prosperity of our rabbits and fine Swiss goats. We are going to enjoy the shade of our trees and inhale the perfume of our roses. Still further along, we are going to consider what constructive machinery, as revealed by the inquiry set in motion by Secretary Lane, society must provide in order to

achieve these blessings for the millions of our common humanity—for those whose dream of a sweeter and finer way of life is destined to come true. But here we are still dealing with general principles underlying it all. Let us return to Washington for this purpose:

Here is a city of nearly 450,000 which goes on growing with each decade, and which in view of some expert minds may ultimately reach a total of a million or even two millions. While it has few industries, it is preëminently a payroll city. And of all payrolls in the world, Uncle Sam's ranks first in point of dependability.

Here are tens of thousands of people engaged in a daily routine which, for much the larger part of them, offers little variety, and not the slightest opportunity to exercise their initiative faculties. As a class, their positions are secure, and their income certain beyond anything that is known in ordinary industrial walks. They can look down the vista of the years and plan for their future with better assurance of consummation than almost any other class of salaried workers. And yet, there is an end to the road—old age.

This is not now the sheer drop it once was and is yet for nearly all salaried workers except those employed by the United States. There is now an old-age pension for Government people. But, while it represents a progressive step in humanitarian legislation, and is particularly valuable because of the principle established, it is almost entirely inadequate to the needs of those living in the crowded city and having no retreat in view. It breaks the fall, but provides no comfortable resting place.

With the exception of mechanics, letter-carriers, and postal clerks, the old-age pension applies only to those who have been on the Government payroll for periods ranging from 15 to 30 years and reached 70 years of age. It is divided into six classes, and the maximum amount of the annuity ranges from \$360 a year in the lowest to \$720 in the highest class.

Without indulging in ungracious criticism of an act inspired by the finest spirit, it must be said that even the maximum annuity, under the highest class, spells hardly more than poverty for those who must continue to pay city prices for rent and food. Probably the average annuity will not exceed \$500, and this is scarcely more than the single item of rent that must be paid by the average family in Washington. It would mean, perhaps, a sudden shrinkage to half or two-thirds the average income received before retirement. Not a pleasant prospect, surely, for old age! We must do better, infinitely better than this, or our civilization is, indeed, a sorry failure.

Let us turn now to a happier picture, that of the Government clerk in full tide of health and strength, with his assured income and years of usefulness before him. To-day he is paying a good share of his salary for rent, and that rent inevitably grows with the growth of the city. Every dollar so paid is a futility from the standpoint of investment or provision for the future. Whether he gets his money's worth as he goes along is beside the question. He might be paying rent to himself instead of the landlord, and he ought to do so. He might become a direct beneficiary of the growing land values, instead of their hopeless vic-

tim; and he ought to do that. Savings-bank deposits are strikingly less in Washington than in many industrial communities; a fact that signifies not less thrift, but less pay. Nevertheless, it is possible to devise a plan under which every family represented on the Government payroll might acquire a garden home of its own within a reasonable number of years. Furthermore, if there is any prize that can be offered that would evoke the last ounce of energy and ambition—the utmost measure of thrift on the part of the average family—it is the garden home and security for old age.

We are going to see, presently, that \$720 a year, or even \$360 a year, for the man who owns his rent-free home, produces a large part of his table supplies, and enjoys his facilities of amusement, recreation and intellectual enlargement at the minimum cost, is a very different thing from the same amount of money for a family paying the last cent of tribute to landlord, merchant, middleman and transportation agencies.

The economic gain for those transplanted from the city apartment to the home in a garden is important, and naturally the first thing to claim our attention. It is, however, when considered from the standpoint of the character of our people and their institutions, of less importance than the spiritual and social gains to be scored to the credit of the process. If a man goes up in his own estimation when he puts on a new suit of clothes, as is generally conceded, how much higher will he rise when he steps from rented quarters into a home of his own? His own ground, his own roof, his own fireside! It will not be quite so easy to tell him how to vote on election day—not quite!

His sovereignty is enhanced, his citizenship ennobled. He may still work for wages, but he has won a stake in the proprietorship of his country. He sings "*My Country 'Tis of Thee*" with a new emphasis. The old flag, always beautiful to his eyes, is eloquent now.

So with his food: It is not merely that he has something to eat—he has always had that and always expected to—but it is the fact that it is the food of his planting, nursing, raising, reaping. Never were there such strawberries as he picks, warm with the sunshine of his garden. Never were there peppers with such a "kick" as those coming fresh from his vines. We need not go through the list, we are going to fondle all these precious things later; but at this point it is essential that we should feel the thrill of the new adventure, and understand that we are unlocking a spirit that has almost perished between the drudgery and loneliness of the old forms of rural life and the pressure of urban congestion. It is a very precious spirit—one that draws man close to God in the joy of co-creation.

The social metamorphosis to be wrought will bring an immense accession of health and vigor into the lives of families and communities. We have learned that in the matter of social organization, as, perhaps, in the matter of industrial organization, there is a unit that is too large for efficiency, just as there is a unit that is too small for efficiency. A recent instance has come under my observation—the experience of a California boy attending the largest high school in the United States. The school is nobly housed; equipped with every facility, even to its printing office, bank and restaurants, and second to none in the ability and de-

votion of its faculty. And yet with all these advantages and its 3,000 pupils, it offers less in a spiritual sense than the school from which he came in California, where there were only 150 pupils. It is assumed that the reader knows that California schools are by no means to be compared with average rural schools mentioned in an earlier chapter. California is in a class by itself—not only with respect to climate and scenery, but in the magnificence of its school fund, and the progressive spirit of its people.

The point is that the Washington school suffers from its bigness, while the California school gains by its smallness. The loss and gain are wholly in the matter of the spirit, not in physical or technical conditions. It is really true that work outside of the prescribed programme, and dependent upon the voluntary interest of the students, as, for example, the debating society, draws the larger attendance in the small school, the lesser in the big one.

The principle applies to all departments of social and intellectual life. While a community may be too small for the successful cultivation of such interests, it may also be so large as almost entirely to efface them. The garden city offers ideal soil for the cultivation of the social plant. Not only is it right as to the quantity, but also as to the quality, of its citizenship. It is not so large as to suffocate the neighborly instinct, nor is it likely to foster class distinctions arising from differences of wealth and position. These considerations have a deep significance with respect to our national character.

In considering this aspect of the subject the fact should be borne in mind that the people of the garden homes share all of the advantages of the metropolis. They are by no means detached from its life. As in the case of the extremely well-to-do referred to in earlier pages, they are *of* the city, though not *in* the city. To a very large extent they enjoy the benefits and avoid the drawbacks of both city and country. Theaters, libraries, art galleries, pageants, and spectacles of every sort; big department stores; opportunities to see and hear the great of every land as they go on their rounds; newspapers at morning and evening, even the midnight extra—all these, and much more, are for the denizens of the garden homes, as much as for the residents of the crowded towns.

Why has this new and better form of life lingered so long in the coming? Awaiting its logical hour in the process of social evolution, perhaps; yet that is not all, for many have seen the light and wished to follow it. This could not usually be done, at least in the best way, by an individual family acting alone. It calls for planned development; for the purchase and subdivision of land upon a large scale; for scientific preparation of the soil; for the installation of community facilities and utilities, such as water-supply, sewerage, parks and public buildings. In a word, for the genius of social engineering, supplemented by an amount of capital and executive capacity that shall be equal to a large constructive task. All this belongs rather more to the programme than to the philosophy of the subject, and will be considered in its proper

place. First, let us make sure that the thing is worth doing; then it will be proper to consider how it may be done.

The opportunity lies there, out in the sunshine, in the surroundings of every city in the land. And the Invisible shall become the Visible, even to the material sight, as now to the eyes of the Spirit.

CHAPTER VI

GARDEN INSTINCT REVEALED BY WAR

“The kiss of the sun for pardon;
The song of the birds for mirth;
One is nearer God’s heart in a garden
Than anywhere else on earth.”

THERE are those who deny that there is any such thing as a latent love for the soil in the hearts of our urban masses. They assert that the last thing that would appeal to these people is a patch of ground and a hoe; that they have turned their back on the country with a sigh of relief and a grim determination to have no more of it; that their whole interest in life is bounded by the metropolitan horizon; that within these limits are their livelihood, their social, intellectual and religious interests; and, beyond an occasional picnic in the woods, they care for naught else.

Such criticism, of course, loses most of its force when applied to the garden home, which simply enlarges the city boundaries and sacrifices little or nothing in the way of urban advantages. Apart from that, however, the criticism rests on mistaken grounds. Love for the soil has not gone out of men’s hearts. It is a primal instinct which may have been repressed, or even paralyzed for the time, but can no more be destroyed than love of family or love of country. It is of divine substance—hence, indestructible.

The world war, which illuminated many dark corners, revealed the gardening instinct in all its original vigor, and mobilized it for the service of the country without the formality of the selective draft. We raised 4,800,000 soldiers and trained them for battle with marvelous celerity; but, at the same time, an army of 5,250,000 war gardeners grasped rake and hoe and proceeded to do their part without the inspiration of martial music, without hope of glory or material reward. It was a remarkable demonstration, showing that our people have not only the instinct but the aptitude for this adventure. It was a great light thrown upon the character, the capacity, the aspirations of the American people. It is one of the war lessons which has not been appreciated at anything like its true value.

The National War Garden Commission was not, as most people suppose, a Government activity, though it had its headquarters in Washington, and enjoyed the moral support of Federal authority. It was the voluntary undertaking of a number of patriotic citizens, headed by Charles Lathrop Pack, of Lakewood, N. J., President of the American Forestry Association. For more than two years he turned over bodily the activities of that organization to the war-garden work, at a cost of about \$1,000,000 a year, raised by himself and associates, and consecrated to the work of popular education. The task undertaken was so extraordinary that most men would have regarded it as impossible of accomplishment.

The problem was to bring about a vast increase in the country's food supply: to do it very quickly, and

to do it without taking from existing farming operations either an acre of ground or the labor of a single man, since both land and labor were already under the fullest pressure. Not only so, but the railroads were groaning under the heaviest demands and it was essential that the vast increase of food supply should be obtained without adding materially to the burden of the railroads. How could the thing be done? Only by inducing the people to utilize every piece of ground, without remitting any of their regular work, which was also in unusual demand.

The scheme was chimerical, of course. Any sensible person would have known it! But Mr. Pack and his friends did not know it. They believed that the great spirit evoked by the war could do impossible things. The event proved that they were right.

Millions of gardens—more than five millions—sprung into almost immediate existence. These gardens blossomed not only in the workingman's back yard, but on the millionaire's front lawn. Italian gardens, which had been the pride of their owners, were beautified by straight rows of common vegetables and ministered yet more to pride. Public parks, which had been mere fields for popular recreation, were dedicated to a more sacred public purpose—that of feeding the people and winning the war. The total product of this war-gardening scheme between May, 1917, and June, 1919, reached the impressive figure of \$1,250,000,000. The plan served its immediate purpose; but its deeper significance has yet to enter the consciousness of our people.

First, it revealed the affinity of our people for the

soil. Men rushed for the shipyards to work for \$10 a day. While they were inspired by the depredations of the German submarines, they also obtained substantial material reward for their own pockets. When these same men got up an hour earlier to cultivate their gardens, and came home from the shipyard to labor with the hoe until dark, they were working for something higher than dollars, in response to a finer impulse than the desire for gain.

They were preserving their families and their country against the peril of possible famine. They were exerting their initiative and creative faculties, and they found that the process yielded a great sense of satisfaction. They were adventuring upon the lost field of individual independence, and while they did not go far in that direction, they yet went far enough to catch a fleeting glimpse of the promised land. They demonstrated their aptitude for the thing. And that was a comfort. If they had once known how, they discovered that they had not forgotten. If they had never known how, they discovered that they could learn. And that was a joy.

This brings us to another hopeful aspect of the matter: Of the 5,250,000 families who enlisted as war gardeners, something like 3,000,000 really did not know how to do it, or at least how to do it the best way. To my mind, this is one of the most valuable lessons of the experience—the teachability of our people; the willingness to learn; their eagerness to respond to disinterested leadership. For, be it known, not less than 3,000,000 of these families entered into direct communication with the National War Garden Commission



CHARLES LATHROP PACK

President of American Forestry Association, whose remarkable success as Chairman of the National War Garden Commission (1918-19) revealed the latent love of the American masses for the soil



at Washington, taking correspondence lessons at the hands of the best experts money could employ, or patriotic fervor command. These lessons included the art of preserving vegetables for winter use.

The result was an extraordinary and almost immediate stiffening of the battle-front. There was an enormous gain in efficiency. War gardening became a science in many instances. If the war had lasted ten years longer, the nation would have learned the greatest single fact in the world—that a man can make a living from a very little land. And, when that fact is finally learned, in the length and breadth of America there will be neither a homeless man nor a hungry child.

Was it Woodrow Wilson who intimated that if we could have the same spirit in peace that we have in war the world would speedily become a paradise?

The war-garden episode, great as it was in its immediate results, was only an example of crude emergency work. Its value for the present purpose is to show that the country-minded millions in big cities can garden, and will garden, if they have a chance; and that these facts have a very intimate relation to cost of living. To accomplish the best results, however, they must have a better chance than they found in vacant city plots. The city of the future should be so organized that the work may be conducted on a permanent basis and under the best conditions. Furthermore, it must be founded on the principle of homeownership, of landed proprietorship. While a man will work with fierce energy on anybody's ground to help his country under the stress of war, it is his own

ground that evokes his abiding love, and with it all of his resources of energy and skill in times of peace.

Neither is gardening, and especially the culture of vegetables which come to maturity in a few weeks or months, more than the beginning of industry in the true garden home. The fruits of tree and vine lie beyond the scope of the emergency garden or city plots, requiring years for profitable production. Then there is the matter of small livestock, with its assurance of milk and meat, as well as fresh eggs for breakfast. If to these considerations we add the need of permanent demonstration plants and other forms of popular instruction, together with the institutions of social and intellectual life, we readily see how far short the war garden necessarily falls of meeting the need.

There are a number of American cities where the war-garden idea has taken root and become a permanent institution, and where new subdivisions have been laid out with this idea in view. In such cases the lots are made unusually large, ranging from one-fourth of an acre to an acre, and planned with special reference to the accommodation of poultry-yards, rabbitries, and similar small livestock. The movement is particularly advanced in California, especially in the neighborhood of Los Angeles, where it has become a genuine gospel. For example, how different from the ordinary announcement of the new subdivision is the following:

“The shadow of the coming economic reaction lies across the path of every wage-earner.

“It clouds the future of every salary-earner.

“Why not lift that shadow

“And get out into the sunshine?

“Why not turn the tide so that

“You may float upstream instead of down?

“The Homecroft garden is the anchor within

“And it is within every man’s reach.

“Every family seeking health and happiness should think for itself and realize that it must solve its own problem, instead of thoughtlessly marching in lock-step with a multitude who do no thinking, and are merely drifting toward the point of least resistance. The only safe course for any family is to break away from the unthinking mass; and, as a family anchorage, secure the ownership of a piece of land from which their own efforts will produce the food for the family, at a point nearby the commerce of the city.”

These are the words of George H. Maxwell, one of the strongest advocates of the garden home, and a man of standing in American public life, who discovered the truth many years ago. The fact that it has become popular to depend on his philosophy instead of the old-fashioned real estate arguments as a means of winning favor for a new subdivision is a most hopeful sign.

In England the garden-city idea has taken firm root, and there have been several successful examples, notably that of Letchworth. In the United States nothing really adequate and worthy of the nation has yet found expression on the soil; though there has been much discussion, and the idea has many advocates.

There can be no doubt whatever that the people are ready for it—millions of people—and that the garden city should be as much a part of every municipal equipment as the water-supply, schools, public libraries, or street-railway systems.

CHAPTER VII

“THE MOST VALUABLE OF ALL ARTS”

I believe in a spade and an acre of ground. Whoso cuts a straight path to his own living by the help of God, in the sun and rain and sprouting grain, seems to be a universal working man. He solves the problem of life.

Emerson.

ELSEWHERE I have ventured the prediction that the next great passion of mankind will be for the soil. Now let me add that the next great popular science, the next great popular art, will be the science and the art employed by millions of ambitious, energetic folk in building the peace garden on the foundation of the war-garden experience, thus raising the American standard of living higher than ever before, and establishing the institutions of our common life upon the enduring basis of landed proprietorship and individual independence.

Sixty-two years ago Abraham Lincoln, in a casual speech, scarcely reported at the time, and the tremendous import of which has not been sensed by the people even now, used these prophetic words:

“The most valuable of all arts will be the art of deriving a comfortable subsistence from the smallest area of soil.”

It is a good speaker who can put one big thought into a single sentence of twenty-two words, but Lincoln put three separate and distinct big thoughts into the

sentence I have quoted. And in each of these there is the germ of a great philosophy of every-day life. One wonders if the orator himself realized all that he was saying; or whether he simply followed Emerson's counsel: "A man should learn to detect and watch that gleam of light which flashes across his mind from within, more than the luster of the firmament of bards and sages." Consciously or unconsciously, he reflected the Infinite Intelligence as surely in this as in the famous speech at Gettysburg and the Second Inaugural.

Consider the significance of the expression, "the most valuable of all arts" as applied to the cultivation of the soil. Who had thought of it as in any sense an *art*—this matter of planting and digging potatoes? An occasional poet or philosopher, perhaps; but certainly this was not the idea entertained by the common intelligence. Art, according to Noah Webster, is "the skillful and systematic adaptability of means for the attainment of some desired end; skill in accomplishing a purpose." Science, according to the same authority, is "knowledge gained and verified by exact observation, and correct thinking especially as methodically formulated and arranged in a rational system."

During the past half century, and especially the past two or three decades, thanks to Government and university activities, American agriculture has advanced far along these lines. But Lincoln was speaking to the pioneer settlers in a new State barely emerging from the wilderness—Wisconsin in 1859. There was very little science or system in the farming method then and there in vogue. And in coupling "art" with

the prosaic work of planting the new clearing, the orator must have spoken over the heads of most of his audience. But Lincoln was right. We shall never make the most of our resources—the most of man's innate love for the soil—until the farmer and gardener imbibe the spirit of the artist.

Lincoln spoke of deriving "a comfortable subsistence from the land." And this was his second big thought. He was speaking, doubtless, to men who had gone into the wilderness thinking more of getting rich than of getting a living. They had taken up free land—all they could possibly obtain under the law—with the expectation that it would become of high value with the passing of the years and the growth of population—an expectation that was by no means disappointed. But Lincoln did not laud this purpose. He was blind to the possibilities of speculation; deaf to the call of sudden riches. Himself the child of poverty, hardship and struggle, his prayer for his countrymen was that they might achieve "a comfortable subsistence," which to his mind meant security of life, even unto old age.

Greatest of all was his final thought: "The smallest area of soil." The very crux of our rural civilization, the very hope of our rural democracy, lies in that phrase. It represents the antithesis of land monopoly and exalts the hope of a well-provided life as the dearest goal of our citizenship. When men shall come to regard the use of the soil as an art, based on scientific knowledge and pursued by scientific methods; when they accept the thought of a "comfortable subsistence" rather than unearned speculative profits as the

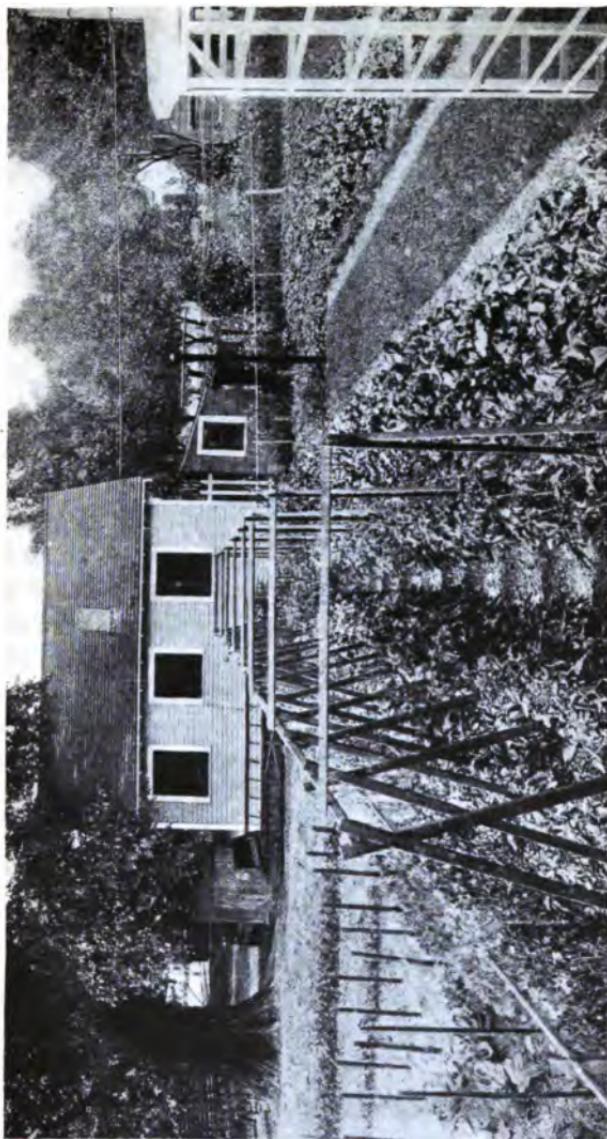
object of their efforts; and when they learn to satisfy these needs from "the smallest area of soil," then we shall solve our rural problem in a way that will bring real satisfaction to the soul of America.

The smaller the holding, the more intensive—hence the more artistic and scientific—its cultivation must necessarily be. The smaller the holding, the nearer and more numerous the neighbors—hence the finer the institutions of civic and social and intellectual and spiritual life will inevitably become.

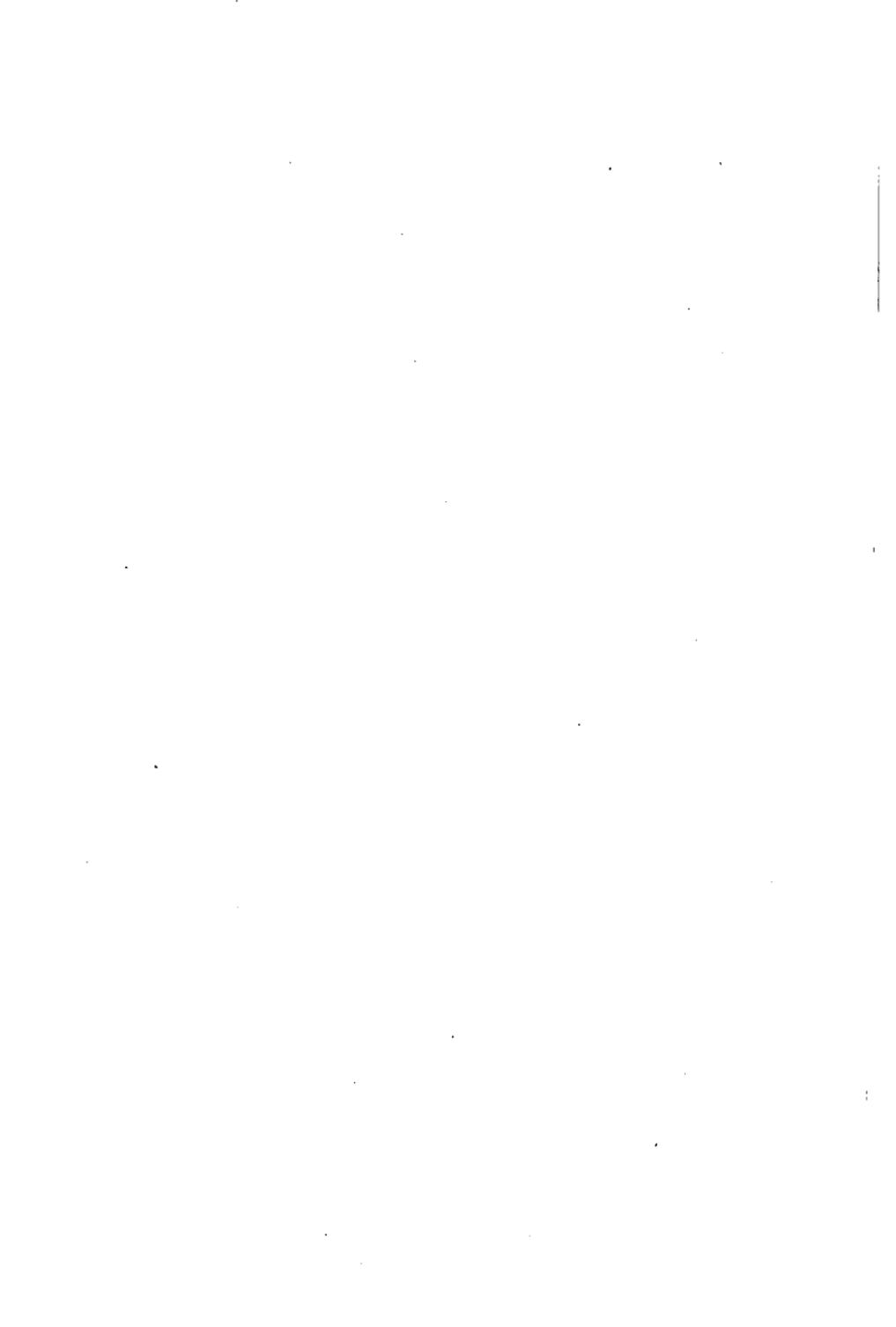
Lincoln said it all!

The time has come to apply this wisdom in the practical life of our people. It points directly to the home in a garden for millions of our country-minded city people. It extends, however, beyond them and reaches out into the true rural life of the nation, now awaiting some new and mighty impulse that shall effect a basic reorganization and reconstruction. Here, as well as in the garden home, there is need of art and science; of the adoption of a "comfortable subsistence" as an economic ideal, and the realization of all the social, intellectual and spiritual possibilities inherent in the smallest area of soil. This branch of the subject will be considered later. Just now we are thinking of the garden home; and the place to go for our inspiration along practical lines is that part of the United States where the new mental attitude toward the soil has found the best expression. This leads us to Southern California.

There are certain apparent drawbacks in life that turn out to be mysterious providences, or blessings in disguise. For example, the movement toward the land is always a part of the phenomena of hard times. It



A PRIZE-WINNING WAR GARDEN
Won first prize among 600 contenders in Eastman Kodak Works, Rochester, N. Y.



is at such times that men see clearly the insecurity of employment, with abject dependence on some one else for food and shelter. It is then they think of the earth as the real mother who never intended her children to suffer the pangs of hunger.

Sometimes there is a blessing concealed in high land values. The more land costs, the less of it the average man can afford to buy. It is a case of "the less the better," down to a certain necessary minimum, which, of course, depends upon personal circumstances, including the size of the family. This is so because a man makes better use of the land and acquires neighborhood advantages that would otherwise be beyond his reach.

Another fortunate "drawback" is deficient rainfall, and consequent need of irrigation. Irrigation is a scientific thing in itself, and the application of it in the best way a genuine art. Furthermore, it usually invokes the necessity of close coöperation among many using water from a common source. And the irrigation system in the West—like the dykes in Holland—has been the prolific mother of coöperative institutions of various kinds.

Possibly this condition accounts for the priority and preëminence of Southern California in the matter of garden homes, though doubtless something must be credited to the caressing climate and the irresistible call of its mountain-guarded valleys. Whatever the explanation, it is there that the largest number of people have seen the light and gone farthest along the new path.

"Feed yourself." This is the first maxim of the new

way of life, as preached in the garden homes of Southern California. The idea is not only a sure but a luxurious living. Mr. Marshall V. Hartranft—both prophet and practitioner of the art—has declared:

“You can take the menu program for the past year from twenty of the most affluent homes in Los Angeles, and find nothing but what is duplicated or served better in the acre-garden homes in Southern California.”

This is a very strong statement indeed; but is it not splendid idealism—the thought that the average family in the United States, with income ranging from \$500 to \$1,000 a year shall be assured of a table as generous, even as luxurious, as the table of a millionaire? The dreamer can go no further in the matter of creature comforts; but is the thing within the range of practical possibility?

Not surely by methods commonly pursued. The man who steps into the corner grocery and buys a few packages of seeds, plants them in ground not well prepared, has little or no comprehension of the relation between the amount of his planting and the amount of his family needs, takes no thought of what he is going to have for dinner a few weeks or months hence, but knows only in a general way that he is fond of this, that, or the other—this man will not dine like the millionaire. Science must be enlisted, art employed, forethought used, if any such result is to be obtained. That is what Mr. Hartranft meant when he said “Programme, Method and Schedule are the watchwords of acre efficiency.”

The first thing on the programme is a bill of fare

mapped out long in advance. In fact, they call it "Housekeeping by the Year."

It is obvious that if one is to have certain vegetables for dinner—on June 22, for example—the planting must be done some time in advance, or it will be necessary to run to the corner grocery and buy the vegetables. That will do for the millionaire, but not for the home gardener. And, by the way, this is a good place to remark that the home gardener has the advantage of the millionaire in this respect, since his vegetables will be fresh from the garden, and stamped with that ineffable something that attaches to his own creation. There is an element of love in it that ones does not get in the more or less wilted vegetables bought at the store after passing through many alien hands; nor even in vegetables raised in one's own garden by hired men.

The menu goes up on the kitchen wall, accompanied by tables of maturity, so that the housekeeper can look ahead and see just what material she will have at her disposal on a certain date. The planting is done, of course, in accordance with the bill-of-fare. This brings us to another step in the new and valuable art. This step is successional planting—planting a little of everything in the way of perishable vegetables one day in each week. In the case I have in mind, Tuesday is planting day, and the rest of the week is given to cultural days. Usually the work is done in the early morning hours, "when the wild life of the country tunes up and ushers in the shafts of sunshine that break over the canyon walls." This method is guaranteed to produce a good appetite for breakfast.

One of the interesting aims of the new science is to find a true per-capita basis for planting. It is the common experience of those who have gardens that they plant far more of certain varieties than they can consume, sell to the neighbors, or even give away. There is a profound economic fallacy in this. Mr. Hartranft puts it strikingly when he says:

"We find that one tomato plant will supply the needs of one person. On that one plant we make a million per cent of profit; but if we raise a second tomato plant without a profitable market for the surplus, we lose a billion per cent on that one."

The bill-of-fare, of course, includes much besides vegetables. There are the fruits of the tree and vine; milk and eggs; a variety of meat. These are matters which will be discussed in detail farther on, but just here it is desirable to concentrate the reader's attention upon the importance of ordered production to a desired end, that end being a good living according to a prearranged bill-of-fare. There is, perhaps, no better way than to follow Mr. Hartranft's description of the home gardener, as he sees him in one of the beautiful valleys among the Sierra Madre Mountains, not far from Los Angeles. While details must be adjusted to the requirements of the climate in different regions, the principles are similar in all localities. He says:

"He has a chart of his ground and begins the winter garden. If rows can be made 100 feet long it is best, but it is planted only part at a time. The manuring, the watering and the plowing of the new plot being

ready, on a certain Tuesday he starts a mixed row of plantings about like this:

<i>"Kind</i>	<i>Amount per person</i>
Lettuce	7 plants, 6 inches apart
Beans	3 seeds, 4 inches apart
Beets	6 inches, sown thickly
Carrots	4 inches, sown thickly
Kale	3 inches, sown thickly
Spinach	3 to 5 inches, sown thickly
Turnips	6 inches
Corn	6 grains Bantam variety
Mustard	1 plant for whole season
Onion	8 sets, two inches apart
Peas	10-ft. row, inoculate and lime
Egg-plant	1 plant for whole season
Tomato	1 plant for whole season
Cabbage	1 plant weekly, constant moisture
Radishes	Sow thickly between last four
Celery	Plant a solid row, 8 feet per person

"The following Tuesday he will use the same list, except egg-plant and tomato, and then will have two of his thirty-foot rows coming along. These small rows he must ardently care for every morning after the few chickens and rabbits are fed.

"Acreculture of this character must be allied with two walnut, olive and ahuate trees, several raisin grapevines, prunes, figs, peaches, apricots, enough for drying and canning, chickens, pigeons and rabbits (instead of a pup) and a hive for the honeybee.

"It is a notable fact, and lamentable, that the ten-

dency is to overplant all the berries. One loganberry bush, one mammoth blackberry and one Himalaya berry per individual are as much or more than can be used if the vines are carefully attended."

The varieties of fruit trees would naturally vary with the climate. Of the housekeeping side of the matter, he speaks as follows:

"Just as the programme of life is figured on a card system, so is the housekeeping calculated from the maturities column shown above in the planting chart for each month of the year. A menu made up from the maturities column for every day is then shown; and then, in the 'advance-work' column, can be counted and set forth exactly the number of glasses of jelly and preserved fruits and vegetables contained in the whole year's menu. These itemized figures are carried to the proper month when they should be prepared, and the whole month's work is on the kitchen wall, right at the time the crops are available for using. These also demonstrate how much less is required of each variety than is usually attempted. Only those who have lived from an orchard and garden can appreciate the true luxury of the annual menu. Taking November 1, as a specimen, it reads this way:

"Breakfast: Sliced salway peaches, corn fritters, comb honey, toast, coffee.

"Lunch: String-bean salad, fried tomatoes, milk gravy, boiled potatoes, tea.

"Dinner: Tomato soup, ripe olives, lettuce, boiled squab, baked sweet potatoes, lemon pie, coffee."

In many places some other kind of pickles would be substituted for olives, and some other kind of fruit

pie for lemon, so that nothing except a little flour, coffee and spices would represent cash expenditure in the preparation of these three meals. Of course they are capable of almost infinite variation.

I can not refrain from giving a glimpse of the goats and the bees, since milk and honey are important features of the menu, as they figure in Mr. Hartranft's philosophy.

"Back East, in the village where I grew up, we had the herd boy, who came in summer and took our cow to the pasture. It will be so with our Swiss Toggenburg goats in the foothills. In our town we have not enough of the high breeds to employ a herder yet, but it will come, and Nellie will go to the wild lands with the neighbors' goats and come back at evening to her accustomed stall. On this line we already have the bee factor who manages our hives on shares, keeps the bees in good health, and to-day he brought over 300 pounds of fine honey. If you like honey you consider sugar a poor substitute in coffee and in baking and cooking. Did the Mission Fathers have sugar? Is not sugar only a part of the careless habit of running to the grocery store and buying dinner from tin cans?"

He runs joyously on:

"Since getting my hands into the honey business I feel so stuck up that I am going to send East and get a couple of those rustic-looking straw hives that you see in the pictures of English gardens—those thatched-roof affairs. Any Southern Californian who does not have honey when all of these flowers are abloom, is the one who is stung. He is living a counterfeit life in the

midst of plenty. He is one of the great mass of people who are huddled into apartment flats, innocently assuming that 'you can't eat honey if you don't have money!'"

The art of living well from a little land that shall be worthy of Abraham Lincoln's prophecy must include not only the systematic production of all the elements of the bill-of-fare, but also the art of utilizing these materials by means of the best cooking, and the art of serving them on the daintiest of tables. The whole scheme of luxurious living must hang together, for we are going to boost our common standard of living to the level of the millionaire! God must have intended we should do so when He made the green earth. He provided a land of plenty. If we have lost the way perhaps we shall rediscover it in time to avert the worst consequences of our folly and ignorance.

I can not leave that garden city among the hills without quoting its most distinguished citizen concerning the new way of life. John S. McGroarty, California's poet laureate, and author of the classic "Mission Play," writes of the only Millionaires' Club in the world that prides itself on its broad inclusiveness.

"The club holds its meetings at least once a day on the steps of the postoffice," he tells us. "The only qualification for membership is that you must be a millionaire.

"When the neighbors told us about it first we said it couldn't be, because there are no millionaires in these hills. And the neighbors answered back and said yes, there are lots of them here. They said they were mil-

lionaires of happiness. And they said we could join if we were in that class.

"And we said we saw the point, and it meant that Rockefeller and Morgan and the Jap potato king, and those kind of fellows, were barred out. But the neighbors said that this did not necessarily follow. That if a man had \$1,000,000 he could join just the same, provided he were also a millionaire of happiness. And, if he did not have ten cents, but were a millionaire of happiness—which he could well be if he wanted to—why, he could join, too. So we put in our application and we hope that we will not be blackballed.

"For, dearly beloved, a man is a millionaire if he be happy. More than that, he is the heir of all the ages. He is son of the morning star and brother of the dawn. To him has been handed down the heart of the dancers of Babylon, and the souls of them who laughed in Eden.

"When God made you, He gave you the gift of happiness at your birth. If, since then, you have lost it, go back and find the road where you left the sun to wander in the shadow."

Valuable indeed is the art, and precious the way of life, that makes everybody eligible to membership in the kind of millionaire's club whose entrance fee and annual dues are payable in the golden coin of happiness!

CHAPTER VIII

THE DAWNING OF THE NEW ART

What these strong masters wrote at large in miles
I followed in small copy in my acre;
For there's no rood has not a star above it;
The cordial quality of pear or plum
Ascends as gladly in a single tree
As in broad orchards resonant with bees;
And every atom poises for itself,
And for the whole.

Emerson.

THERE is visible as yet only the gray dawn of the new art sketched in the previous chapter. The effulgence of the fully-risen sun is reserved for the future, but apparently for the early future. A few lonely pioneers—thousands in the aggregate, yet relatively few out of our total population—have beheld this vision of a well-provided life and a secure old age to be won by the scientific use of a little land. So the seeds of the new art have been planted. They must be nourished in the passion of millions for landed independence and self-expression.

The work of the National War Garden Commission extended much further than a temporary increase in the food supply. It was rapidly expanding along scientific lines of development when the War came to a sudden end. For example, it put out many bills-of-fare to show the war gardeners how to make the most of their produce on the family table. In the latter part

of its existence, it gave much attention to the matter of canning vegetables for winter use. If it had been conceived and carried forward as a permanent institution, it might have developed Lincoln's thought of "a comfortable subsistence from the smallest area of soil" to its full proportions. But many things ended with the War; and much that was readily done under the exaltation of the war spirit can only be accomplished now by an appeal to the deeper instincts of human nature. This appeal is being successfully made in many localities, especially in Southern California, as we have seen.

One of the large contributors to the new art is Prof. C. L. Schufeldt of Los Angeles. First as the garden teacher in the public schools, and then as the garden editor of daily and weekly newspapers, he has probably inspired and directed more enlightened home gardening than any other man in the United States. A concrete illustration of his teachings is the accompanying diagram of a home and grounds occupying a lot 50x145 feet, or 7,250 square feet. This is about one-sixth of an acre—scarcely enough to do the thing quite comfortably, even in California. Yet, a careful study of this plan will reveal delightful possibilities, both of family independence and social arrangements.

On this small space of ground there is room for a five-room bungalow, with bath and screened porch; for a garage, and accommodations for three kinds of small livestock—chickens, rabbits, and two fine Swiss goats, since two are necessary to keep the family in milk throughout the year. Then there are the vegetable plots, a dozen varieties of fruit trees, three kinds of

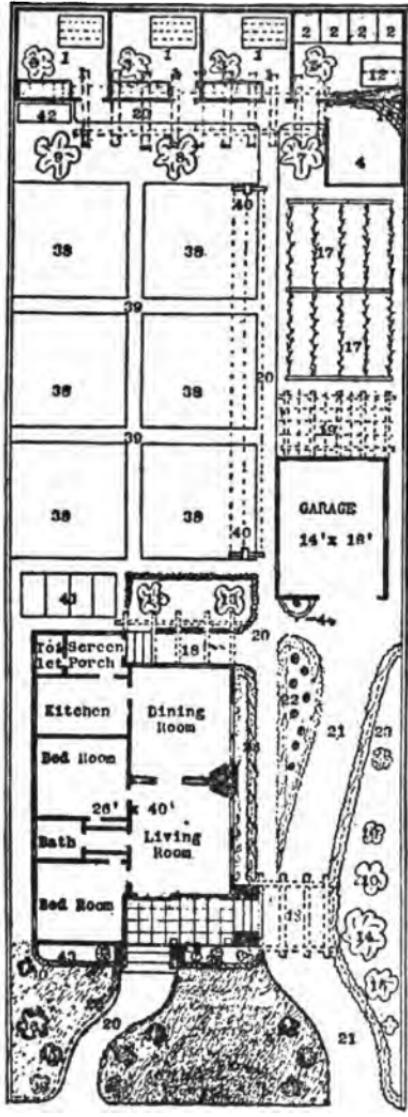


DIAGRAM OF 50-FOOT LOT

How to make the most of lot 50 x 145 feet, as settled by Prof. O. L. Schuett. An acre is nearly six times as large.

KEY

1. Chickens.
2. Rabbits, two or more stories.
3. Plums.
4. Tool and Feed House.
5. Apricots.
6. Camphors.
7. Figs.
10. Pomegranate & Guava.
11. Avocado.
12. Goat House.
13. Orange.
14. Pomelo.
15. Lemon.
16. Chayote.
17. Blackberries, Loganberries, and Raspberries.
18. Grape-covered Pergola.
19. Arbor and Lath-House.
20. Cement walk.
21. Driveway (gravel).
22. Rosebushes (rose garden).
25. Pyrethrum Aur (hedge).
26. Passion vine (edible).
27. Hydrangea.
28. Poinsettia.
29. Fuchsia.
30. Hibiscus.
31. Enonotus Japonica aurea Variata.
32. Grevillea thiemanniana.
33. Coprosma.
34. Mahonia aquifolium.
35. Pittosporum eugenioides.
36. Climbing rose.
37. Vegetable garden.
38. Camphor trees.

41. Hot bed and cold frame.

42. Compost hole.

43. Ferns.

44. Grapevine over garage.

45. Kumquat.

One-half the living expense for a family of five persons may be obtained from a lot 50 x 145.

Author: C. L. Schuett,
1124 West 18th St.
Los Angeles, Cal.

Drawn by S. L. Berry,
1303 West Pico St.,
Los Angeles, Cal.

small fruits raised on bushes, grapevines on the pergola, a rose garden and an abundance of other flowers. There is even the lath house for propagating tender plants. And with all this there is still room for a front lawn. The house itself, of course, is covered with flowering vines.

Isn't it a dear,—such a home within reach of the city payroll and in the midst of all urban advantages?

Too small? Of course it is. It was made to fit the standard-sized lot in Los Angeles, which was not laid out with full comprehension of the economic plan underlying this home. The lot should be twice the size—a third of an acre; or, still better, three times as large, which would make half an acre. Yet, Professor Shufeldt says "one-half the living expenses for a family of five persons may be obtained" even from so small a lot organized in this way. It saves, of course, *all* the rent, and probably half the cost of the food, after allowing for purchase of supplies, including feed for chickens, rabbits and goats, though they are fed in part from the garden.

True, he is dealing with the gentle climate of California. It will be said: "There, perhaps, but not in Massachusetts or New York." The comment is very natural, yet essentially fallacious. It is perfectly true that the range of production is narrower and the season shorter in most parts of the United States. This is a consideration that does not affect livestock at all. It implies different varieties of trees, but not less fruit; more canning of small fruits and vegetables, but not less of these things to eat. In fact, so far as fundamentals are concerned, all that can be done in California can be done elsewhere. Intensive cultivation of

garden farms pays as much, acre for acre, in the Cape Cod District of Massachusetts as in Southern California. In the present case, however, we are not talking of raising food for market, but only for the family table. And it can be done on a small holding in any part of the United States. I have never seen more wonderful vegetables than I found in Alaska.

There is a fallacy, too, in thinking that only California can supply the floral setting provided in the garden scheme. I was born and raised in New England in a generous home that, among plenty of everything else, had plenty of flowers, including the old-fashioned varieties. I have spent most of my life among the semi-tropical productions of California. I trust I am loyal to both—the old home and the new—when I say that the one is as attractive and satisfying as the other in this respect. They are different—that is all.

I dwell upon these things because they are really quite vital to the way of life we are considering. If God had made a whole world and placed all its blessings in a single corner, we should witness a greater congestion of population than has yet occurred to vex the sociologist.

It is quite true that a winter season of four or five months will have its effect on the routine of the garden home and the social life of the garden city. But the law of compensation still works, and if there is loss, there is also gain. The vacation from garden work will not be wholly unwelcome. The appetite for outdoors will be sharpened when spring comes around. The social life of the community should brighten with the fires on the hearthstone. The opportunity for

certain cottage industries should be enhanced. I have no hesitation in predicting that, given the same spirit and industry, the principles of the garden home presented in Professor Schufeldt's diagram will work with equal profit and satisfaction in all parts of the country. But it is, perhaps, not unnatural that California should take the lead. Her golden heart is set on homes!

The new art has advanced much in the past few years, by means of the planting table, now quite generally appearing in newspapers and magazines. The best of these show what to plant (which of different varieties and different vegetables), how deep, how often and how much; how to plant, cultivate and care for, and this is supplemented by notes on cooking. We shall see something of this in subsequent pages; just here the point is that very important steps have been taken in the development of the art of getting much food from little land, and that thousands have been assisted to practical knowledge by means of these planting charts.

In the equally essential matter of getting meat, milk and eggs from very small holdings, there has been even more progress along the lines of scientific and intensive development, and nearly as much has been accomplished in popular education. This is a fascinating branch of the new art, as we shall see.

Few people have as yet realized anything approaching the true art of living well from a little land, in the sense of "Housekeeping by the Year," with programmed bills-of-fare, successional planting, scientific diet, highly-skilled cookery and artistic serving. Nevertheless, it

is amazing to observe how much comfort and even luxury has been obtained in thousands of instances, even by a crude approximation to the ideal. As to this, no one is better able to testify than I, who have so often been the guest in little homes where the thing is done, and where it has become a matter of genuine religion.

Dear, dear, such dinners, compounded no more of material products than of spiritual ingredients—the meat, vegetables and fruit liberally mixed with love and pride! I recall one memorable Thanksgiving when away from home, where all the elements of the sumptuous annual dinner reached me by express. The turkey was a twenty-pounder; and that lordly bird, together with the vegetables, fruits and preserves, had all come from "farms" not exceeding an acre in dimensions—nearly all from a single acre. Better even than the food was the letter tied to the turkey's leg—a letter that triumphantly acclaimed our new way of life.

Is it not inspiring to realize that the very best things in the world, even on the material side, are within reach of us all, when we shall command the genius to make the most of our environment? And this genius, I insist, will prove to be the genius of democracy—the expression of a divine aspiration for a better, freer and ampler life on the part of the masses of men and women who bear our burdens in war and peace. Even so, there must be leaders and prophets, men of vision who see clearly a little ahead of their time; tall men who hear the whispers of the Infinite. Of such men, in this line of work, the incomparable leader and prophet is my friend and comrade, Luther Burbank.

CHAPTER IX

LUTHER BURBANK AND THE NEW EARTH

And he gave it for his opinion that whoever could make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together.

Jonathan Swift.

O F all the persons mentioned in these pages, Mr. Burbank is the most significant; and this not merely because of his worldwide fame, but much more because he is dealing at first hand with the very elements that enter into the daily life of the home-in-a-garden. I spent a never-to-be-forgotten day with him at Santa Rosa, going over the theme of this book with considerable care, and quite needlessly reassuring myself of his sympathy and support. He is, of course, the foremost man in the world in his line of work.

And what is that line of work?

Superficially it is plant-breeding, but fundamentally, it is infinitely more than that. It goes to the heart of the problem of human life upon this planet. It affects first, and most palpably, the food supply of the people. Here, alone, its influence is not only in the highest degree creative, but revolutionary. It means not only *more* food, and more food per square foot of ground, but also *better* food. Follow this a step farther and you see how the common standard of living

must rise with the growing abundance and quality of the products of the earth. Go farther still, and you will see how better living means better people; how larger and more profitable production mean that less land will serve the individual or family—hence, smaller holdings; how this, in turn, means more neighbors, better housed, fed and clad, and how that condition tends toward closer and higher social relationships.

When you have seen all this, you have but crossed the doorstep of Luther Burbank's intellectual empire. Beyond, in the vast interior, lies the domain of his influence that only may be characterized in terms of spiritual thought and action. Our dream of man as co-creator with God comes true. We stand erect, conscious of our Divine partnership. We accept nothing from Nature as finality. All is subject to change, to endless improvement. We are to make the earth ever better and richer, more productive, and, hence, more profitable. The forces of evolution lie in our own hands.

I have searched Mr. Burbank's writings for the best word to express the reach and splendor of his vision. But there is no best word. He must be studied as a whole. To apprehend him even measurably one must stand in his presence, as gentle as that of the poet Whittier and as spiritual as Emerson's. But perhaps the following quotations will help:

“The vast possibilities of plant-breeding can hardly be estimated. It would not be difficult for one man to breed a new rye, wheat, barley, oats, or rice which would produce one grain more to each head, or a corn which would produce an extra kernel to each ear, an-

other potato to each plant, or an apple, plum, orange or nut to each tree.

“What would be the result? In five staples only in the United States alone the inexhaustible forces of Nature would produce annually without effort and without cost, 5,200,000 extra bushels of corn, 15,000,000 extra bushels of wheat, 20,000,000 extra bushels of oats, 1,500,000 extra bushels of barley, 21,000,000 extra bushels of potatoes.

“But these vast possibilities are not alone for one year, or for our own time or race, but are beneficent legacies for every man, woman or child who shall ever inhabit the earth. And who can estimate the elevating and refining influences and moral value of flowers with all their graceful forms and bewitching shades and combinations of colors, and exquisitely varied perfumes? These silent influences are unconsciously felt even by those who do not appreciate them consciously, and thus, with better and still better fruits, nuts, grains, and flowers will the earth be transformed, man’s thoughts turned from the base, destructive forces into the nobler productive ones which will lift him to higher planes of action toward that happy day when man shall offer his brother man, not bullets and bayonets but richer grains, better fruits, and fairer flowers.”

When I asked Mr. Burbank if he was training any one to carry on his work, he replied: “Thousands.” At the moment, I did not understand, but later came comprehension, and with it, a better sense of his greatness. This wonder-worker makes no concealment of his meth-

ods and no effort to monopolize the mighty forces which he has learned to appreciate and direct. The miracle of the new flower or fruit, or vegetable he would make as common as the sunshine. He would like to see a Luther Burbank in every garden, new light breaking on every horizon, and each morning another morning of creation. So would he pass the priceless heritage to the future.

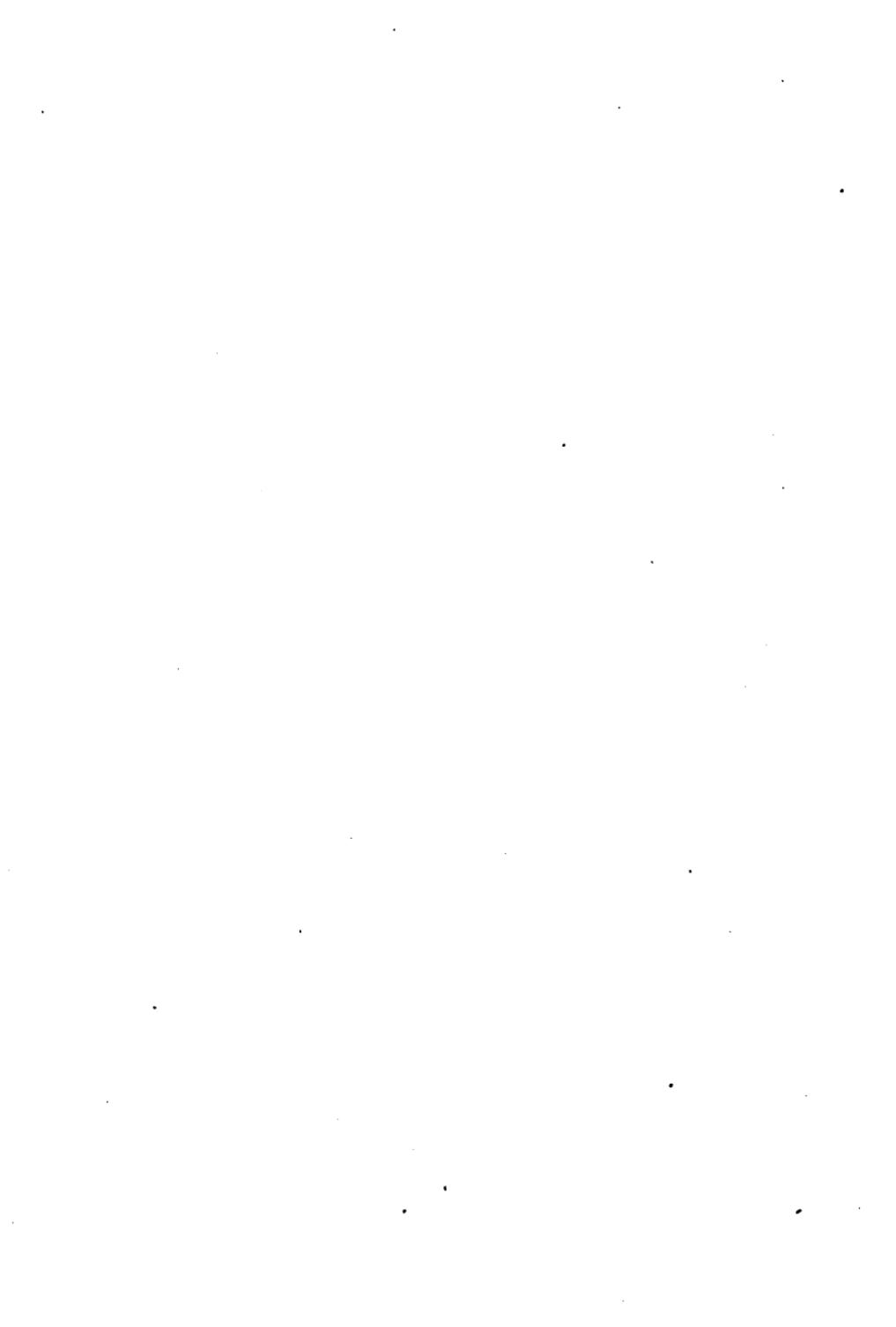
To study Luther Burbank as he is studied by the few, one joins the Burbank Society and reads the story of his work as it is set forth in his own twelve volumes under the editorship of Dr. Henry Smith Williams, the noted student, historian and social scientist of New York. But to study him as the many may do, one gets Dr. Williams' own volume, "Luther Burbank, His Life and Work." Here, in the compass of 329 pages, with many illustrations, one gets a swift summary of the man, his ways and his achievements. But in order that the mystery which surrounds his work in the minds of so many people may be modified, if not dissipated, the following is quoted from Dr. Williams' book:

"The fundamental principles of plant development through which Mr. Burbank thought to develop new and improved varieties were not in themselves novel or revolutionary. They consisted essentially in the careful selection among a mass of plants of any individual that showed exceptional qualities of a desirable type; the saving of seed of this exceptional individual and the carrying out of the same process of selection among the progeny through successive generations.

"Couple this method of selection and so-called line breeding with the method of cross-pollenizing different



LUTHER BURBANK
Prophet and Exemplar of the New and Better Earth



varieties of species, to produce hybrid forms showing a tendency to greater variation or to the accentuation of desired characters, and we have in outline the fundamental principles of plant-breeding as known to horticulturists for generations, and as applied by Mr. Burbank from the outset of his career. But there were sundry highly essential details of modification that were introduced by the Santa Rosa experimenter, as will appear presently.

"Moreover, even in the application of the old familiar method, Mr. Burbank was able from the outset to gain exceptional results because of certain inherent qualities that peculiarly fitted him for the work. Among these qualities was his exceedingly acute vision, a remarkable color sense, and an almost abnormally developed sense of smell and taste. Artists who have tested his eyes have declared that he can readily detect graduations of color that to the ordinary eye show no differentiation; and it is a matter of hourly demonstration that he can ferret out an individual flower having an infinitesimally modified odor in the midst of a bed of thousands of such plants, almost as a hunting dog detects the location of a grouse or partridge under cover.

"Similarly, his exquisitely refined sense of taste guides him in selecting among thousands of individual plums, or cherries or grapes or apples or berries the one individual specimen that has the most delectable flavor or that shows a minute modification of flavor in the direction in which he is endeavoring to modify the variety.

"The almost preternatural endowment of special

senses is supplemented by a knowledge of the coördination of parts—say between the stem or leaf and the future fruit of a plant—that is so penetrating and mystifying as to seem intuitional, and to suggest occult powers of divination.

“As an instance, you may see Mr. Burbank striding along a row of, let us say, plum seedlings comprising some thousands of plants, perhaps a foot high. He seems to inspect the little trees but casually, except that now and again he pauses for a moment to indicate with a motion of his hand that this or that plant has particularly attracted his attention. A helper, or more likely two helpers—for one can scarcely keep up with the energetic leader—will be at hand to note the signals; and a bit of white cloth will be tied about each successively selected seedling; or two pieces of cloth, or even three, in case an individual has seemed to show quite exceptional promise.

“And with that, one stage of the work of selection is finished. Perhaps ten thousand seedlings have been passed in review in a half hour, and conceivably fifty or a hundred have been selected for preservation. These have shown to the keen scrutiny of the plant experimenter such qualities of stem and bud and leaf as to forecast the type of fruit sought to be developed in this particular experiment.”

The principles of selective breeding which Mr. Burbank employs apply to every department of production. He has used them not only in the production of new varieties, but even new species of fruits, berries, nuts, vegetables and grains. Of all his productions the Burbank potato, which he produced when 26 years of age,

is doubtless the best known. This literally dominates its field; something like 600,000,000 bushels have been grown to date. It by no means found early acceptance, however, and in this as in many other instances he has been made the victim of substitution. It is easy to imagine that many of his valuable creations now regarded as matters of spectacular interest will some day be as generally used as his famous potato. How much this day will be retarded by the conscienceless sale of things pretended to be his which are not his at all, no one can say.

I have long thought that I would rather have the opinion of Luther Burbank concerning the foundation principles of the new life of the land, than that of any other living man. His minutes are like diamonds, yet he lavished his precious time upon me, and never have I talked to any one else who listened with such perfect sympathy and complete comprehension. My highest hope has been that he would feel that his own work is of peculiar value to those who make loving use of a little land, and that for them it would mean better living and higher rewards for their labor. This hope is justified.

I explained how the old forms of country life have failed; how the life of the land must be renewed, restored, made over; how the new appeal must be to the deepest instincts of the human heart, the new institutions expressive of the best ideals of democracy. His response was instant and enthusiastic. When I asked him how much land is really necessary for the average man to use, he replied:

“A thousand acres for an Indian, a hundred acres

for a farmer, ten acres for an orchardist, one acre for a good market gardener, half an acre for a flower or seed man, and for an experimenter like myself, a graveyard lot will do."

I told him we were talking of a new science of living from the land, and that its first maxim is, "Feed yourself." I explained that the thought is not of a mean living, not of a bare subsistence, but of a bill-of-fare deliberately planned in advance, with a programme of ordered production to go with it, and that this bill-of-fare is intended to be luxurious in the wholesome sense of the term. He replied that this is the only sound principle, and that it is absolutely feasible for those who look to a little land for their living. "Let us analyze it a bit," I said. "While I have authentic records of those who have made an entire living, and a good one, from much less than an acre, I am nevertheless told by well-meaning students of the land problem, including some in positions of authority, that an entire acre is necessary to produce vegetables alone for a family of three even in California."

Mr. Burbank glanced at his secretary with a twinkle in his eye. He said: "We have a family of three and produce most of our vegetables, including carrots, beets, cabbages, celery, onions, spinach, lettuce and lettuce seed, in a garden 12x20 feet, or 240 square feet."

He is very fond of asparagus and uses a variety of his own creation called "The Quality." A bed 12x12 feet supplies his family twice a day. It reaches maturity some time earlier than the common variety, to which it is decidedly superior in size, color and delicacy. In referring to the longevity of asparagus, Mr. Bur-

bank spoke of one bed in England which is said to be 100 years old.

He does not raise potatoes, of which he eats comparatively few, but all the other vegetables consumed by his family are raised in beds which represent a total of but 384 square feet. This is only one one-hundred-and-sixteenth of an acre! This would leave better than ninety-nine-hundredths of an acre for a family to use for such other variety of vegetables as they might prefer; for the few choice trees, vines and shrubs necessary to supply its fruits, for the ground on which the house would stand, and for whatever they might depend upon as the principal source of cash income, whether some sort of poultry, or choice products of the garden.

For the comfort of home gardeners who may be struggling with poor soil, it is worth while to remark that the ground which now serves Mr. Burbank for his famous experimental garden was thought to be so poor that no one wanted it. He made it over to suit his purpose. His mention of the fact led to a discussion of the extent to which it is possible for the man who uses a small piece of ground, not only to change the soil, but, in a sense, to alter the climate. Prince Kropotkin tells us how the French gardeners have taken the raw edge off their climate and forced the growth of their plants, not only by the use of glass for cover, but by the construction of stone walls which hold and reflect the heat while also furnishing perfect protection from the winds.

In the matter of scientific and intensive use of the soil, we have not touched the hem of the garment in this country as yet. We have run to broad acres and speculation, to machinery and hired men. We are just

now at the dawn of a new and infinitely finer day. Not broad acres, but little lands; not speculation, but home building; not the grudging labor of hirelings, but the loving labor of self-employed proprietors—these are the signs and tokens of the new day. Of that day Luther Burbank is the prophet beyond anything we have realized heretofore. It is not merely the dollars-and-cents side of his work, though that is important. Surely, it is important to improve the quality of fruit, to double or treble the productive capacity of a plant, to bring a vegetable into the market four or six weeks ahead of its season, and thus to increase the earning capacity of the man who lives from the soil. But even more important is the spirit which he puts into his work, and which in time must be diffused among the masses engaged in the tilling of the land. It is the spirit which calls for better and ever better things, which tends constantly and strongly toward higher standards of labor and of living, and puts science in place of chance. This is the spirit which is to give us the New Earth.

I asked Mr. Burbank what of his own creations were particularly adapted to serve as a cash surplus crop for the home gardener. He mentioned his new tomato, which anticipates the usual season by four to six weeks as something that will be particularly profitable. He recurred again to the "Quality" asparagus, which is so great a favorite upon his own table. The Burbank Giant Crimson rhubarb was also mentioned for winter and early spring. Then he sent out for some specimens of his improved "balloon" raspberry, averaging about three inches around. They were so big I could hardly

believe them to be raspberries at all, at first, and yet very sweet and indescribably delicate. He has picked 253 of these berries at one time from a single bush. And they ripen four weeks before the common raspberry. They also anticipate blackberries and strawberries by something like six weeks. He spoke of his blackberries, particularly two varieties, the "Himalaya" and the "thornless," as well adapted to home gardens.

In discussing fruit for the benefit of the home table, I asked him what he thought of the dwarf trees. "Why not several varieties on a single tree of ordinary size?" he suggested. It seems he has one apple tree now bearing 526 varieties. That is an experimental affair, of course; but he says it is entirely practicable for a family to raise four favorite varieties on the same tree. He recommends this plan as preferable to growing dwarf trees, even from the standpoint of economizing space. Asked what else he would suggest as peculiarly suitable for those who might wish to supplement their income by selling some surplus from their gardens, Mr. Burbank answered:

"Improved golden bantam sweet-corn; cocoanut squash, which requires little space, keeps good throughout nearly the whole year, and is of most desirable size and quality; the production of various herbs and seeds, specializing on one or more."

Whenever I walk in a garden and enjoy the opportunity to eat the fruit directly from tree or vine, I find myself envying those who have nothing to do with the grocer and the various middlemen through whom the people of cities get their supplies. This was particularly the case as I sampled the new varieties in Mr.

Burbank's garden. I do not know how his latest strawberry will taste when you get it through the channels of commerce, but if you should taste it as it comes from the vine, sweet with California sunshine, you would think a poem on the spot.

I did not seek to draw out my distinguished host on the subject of intensive poultry culture and other economic hopes of little landing not strictly limited to the use of the soil. I was content to know that he believes the garden will do its generous share for the family table, and, from the surplus of berries, vegetables and flowers, contribute to the necessary cash income. But I was delighted to discover that his home dairy consists of two beautiful Saanen goats. When I told him I was an enthusiast on the future of the milch goat, he said: "So am I," and proceeded to describe the superiority of goat's milk over that of cows.

Mr. Burbank believes in the new life of the land as the solution of our national social problem—the problem of accommodating a vast increase in our citizenship in a higher degree of average comfort than that which now prevails. He says: "It is the way to double our population."

No phase of Mr. Burbank's philosophy has challenged public opinion more sharply than that part which is embodied in his book, "The Training of the Human Plant." He is a lover of children, as of flowers and plants and birds, and he is very deeply concerned for the future of the American child. In the abnormal growth of cities he reads a deep menace to the welfare of coming generations. He says:

"Every child should have mudpies, grasshoppers,

water-bugs, tadpoles, frogs, mud-turtles, elderberries, wild strawberries, acorns, chestnuts; trees to climb, brooks to wade in; water-lilies, wood-chucks, bats, bees, butterflies, various animals to pet, hay-fields, pine cones, rocks to roll, sand, snakes, huckleberries, and hornets; and any child who has been deprived of these has been deprived of the best part of his education."

The man who feels that way about children must yearn for the restoration of a wholesome life upon the land, even as some men yearn for military preparedness. Since no thoughtful man can fail to note that the older forms of country life have lost their hold on the human heart, it follows as a corollary that new forms, more attractive and more satisfying, must be created precisely as Luther Burbank has created new forms of plant life. This being so, I never felt it was necessary to ask him how he stood on the question; yet, it is comforting to be assured that this great man, who knows and loves the soil as perhaps no other man in the world knows and loves it, believes in the saving grace of the New Earth.

CHAPTER X

THE SPIRIT OF CREATIVE GARDENING

Oh, when I am safe in my sylvan home,
I tread on the pride of Greece and Rome;
And when I am stretched beneath the pines,
Where the evening star so holy shines,
I laugh at the lore and pride of man,
At the Sophist schools and the learnèd clan;
For what are they all in their high conceit,
When man in the bush with God may meet?

Emerson.

IT is the spirit of Luther Burbank, far more than his actual achievement as a plant-breeder, that is to count in the future life of the land, and especially of the garden home. Authorities disagree as to the importance of his achievement. Prof. Hugo De Vries, of the University of Amsterdam, in Holland, declared that "there is no one in Europe who can even compare with him." On the other hand, there are critical voices in American scientific circles that belittle the importance of his work, and apparently resent his world-wide fame. In the meantime, his influence is extending year by year, and his creations are multiplying, while the freight-trains from California groan under the load of products his genius gave to the gardener and orchardist in former years.

There are, of course, many forces engaged in making "better and still better fruits, nuts, grains and flowers," as Mr. Burbank insistently urges. Year after year

improved varieties are introduced by seed houses and nurserymen, while Science is carrying on its subtle work of research and experimentation in a thousand ways. The experimental and demonstration work of the United States Department of Agriculture, already of vast scope and immeasurable importance, is constantly increasing and extending its practical value throughout the country. Men and women of scientific taste and aptitude, sometimes beginning with little technical knowledge, but developing it as they go along, are doing wonderful things in a quiet way. One such instance came under my observation in the extreme southwestern corner of the United States.

Mr. and Mrs. George B. Frank established experimental gardens near the famous artist colony of Grossmont, ten miles from San Diego, California. Among other things they perfected a new string bean, unusually large, crisp and meaty and without strings. It is a handsome, green-mottled bean, which attracts buyers by its appearance, and sells at a fancy price in the market. It bears heavily, and shows a higher percentage of butter fat and protein than any other variety.

The orchid lettuce, which originated in France, where it grew luxuriously but would not head, was perfected in the Frank gardens. It has a large, loose head, with purplish and reddish leaves, deliciously crisp and tender. It makes an attractive salad leaf, and Mrs. Frank developed a purple potato to go with it, so she could serve what she calls a "violet luncheon." To carry this fancy still further Mr. Frank crossed a tomato with an egg-plant. The result is a very mild-flavored tomato, large and solid, of rich egg-plant purple.

Among other Frank creations are a mottled squash; unusually sweet corn; an improved cucumber, reaching fifteen inches in length, and tipping the scales at three and one-half pounds, while remaining crisp and tender. He has also gone far in the quest of a seedless water-melon.

This is but one among a thousand examples of what is being accomplished by plant-breeders whose work has not yet attracted wide attention, but whose silent labors are constantly swelling the tide of progressive horticulture.

It is not to be expected, and perhaps not to be desired, that all home gardeners shall attempt to become scientific plant-breeders; but the thing that is eminently desirable is that they shall take on the spirit of creative gardening, sharing Luther Burbank's faith in the potentialities of the New Earth. When this spirit fills the minds and hearts of our people we shall see a marked advance in every department—better food, better homes, better people, better everything entering into the common life. This is the ideal: We are not to be satisfied with things as they are; even with the fruits and vegetables that Nature gives us. We are to insist upon the best that can be done in the light of scientific knowledge, becoming partners in the work of creation—at least in an humble sense.

The first step of this process is to adopt the new methods and new products as they come from the master minds, instead of being satisfied with the old. It is amazing to know how interest in the garden—the interest of one's self and of one's neighbors—is quickened and freshened in this way. To grow a tomato that

is less acid than the common varieties, one that matures more quickly, thus escaping the early and late frosts (for the tomato is a delicate plant) is to make gardening an almost exciting adventure. So it is with the whole range of production. The adventure goes on to the dinner-table, when the new products are served to one's friends. And if there is a little surplus for market, and the product is sufficiently superior to bring a few cents more per pound than the common varieties, the adventure culminates in a deep sense of satisfaction. There is a principle here that reaches far, and is truly creative.

I am thinking as I write of one small home at Palo Alto, California, which admirably illustrates this principle, and its influence upon owner and neighbors.

George Hobden had a lot 50x112½ feet; in all 5,625 square-feet—about one-seventh of an acre. The house occupied 1,225 square-feet; the area for walks and driveway 1,825 square-feet; and the rabbit house 500 square-feet; so the vacant space left for cultivation was only 2,075 square-feet; and yet he had room for 22 fruit trees, some of them seven years old, and in full bearing; and for a good garden. His total investment for land, house and improvements was no more than \$2,700. But this was made possible because he had done much of the work himself.

During his boyhood days in England Mr. Hobden learned the art of training trees to grow on walls or trellises like grapevines. This enabled him to economize space. He also adopted the method of scientific grafting of several fruits upon a single stock, so that starting with a peach-tree, he had branches producing apric-

cots, nectarines, Satsuma plums, Imperial prunes; and all growing upon one tree. Within his box-bordered walks he raised vegetables in the most intensive fashion.

The rent-free home, vegetables and fruit, with meat from the rabbitry, represented quite a part of the family living, even upon this very small plot of ground. But that is not the point of the story. The point is that Mr. Hobden made a very *distingué* garden, which, on that account, became a rare joy to himself and to his neighbors—even an object of public pride. Making a liberal investment of love and skill, he collected generous dividends of satisfaction.

If this unusual spirit can be made the common spirit, it will result in a great uplift of garden-home standards, with a wholesome reaction upon the character of the people themselves.

Much has been said about vegetables, yet the fruits of tree and vine are equally important in the scheme of luxurious living for average people. I have a friend in California who never speaks of fruit trees, but always of “food trees.” It is an illuminating phrase, because it brings home to the mind the real economic significance of the garden home. The fruit tree is to be planted and lovingly nourished, as one of the bread-winners. We shall count it “present” at breakfast, lunch, and dinner—not only in “the good old summer time” and in autumn harvest days, but in the winter, when it speaks in the language of jams and preserves. It is not a case of “Everybody works but father.” In the garden home everybody and everything works—not grudgingly, but willingly and lovingly—not only father, mother and

the children, but every inch of the ground, together with the sunshine, the dew and the rain. Man and Nature smile upon the home-in-a-garden. It is in tune with the Infinite!

The hope of spiritualizing the future life of the soil lies right here in getting large numbers of people to accept the creative state of mind and carry it through all phases of their daily work. The fact that they are working for themselves on their own ground, where they are not, like most of the country-minded now dwelling in city apartments, mere tenants at will, but engaged in the evolution of their own homes—this fact should of itself go far towards producing the right mental attitude. The further fact that they are surrounded by neighbors living under the same conditions and sharing the same ideals should count in the same direction. The fact that these people are escaping, so far as their home life and work are concerned, from the regimentation of the city experience, and finding opportunity for the expression of individuality, ought to help powerfully.

Surely, there could be no finer soil for the cultivation of the highest attributes of family life, as well as of citizenship, than that offered by the garden city, undertaken in the right spirit and organized in the right way. But, in the last analysis, all this will depend on the people themselves. It is the old story: "You can lead a horse to water, but you can't make him drink."

What I am saying is that up to this time no one has supplied the necessary "leading." There is plenty of "water," and there is no doubt about the popular "thirst" for the garden home and all it implies in the

way of genuine freedom for our people. That they will make good use of the opportunity when at last it shall be offered, I personally have no more doubt than of the rising of to-morrow's sun.

CHAPTER XI

THE OLD HEN IN A NEW ENVIRONMENT

"Ma Duck, she lays a bigger egg
Than the helpful hen can lay;
But when she's through she cackles not
But simply walks away.
And so we scorn the silent duck;
But the helpful hen we prize;
Which is only another way to say
That it pays to advertise."

THE garden and the little family orchard, however lovingly cared for, supply but a part of the luxurious fare that must be brought within reach of every household. The good old family hen! What visions of fresh eggs and fat spring chickens are evoked by the mention of her name! What is breakfast without a fresh egg? And how rare is a really fresh egg in these days of urban congestion! Who ever had too much chicken—especially fried chicken? These things are the staples of life; and the garden home without a poultry yard would fall far short of fulfilling its mission.

This does not mean, as the reader may hastily assume, the old sort of poultrycraft that turns the chickens loose to run all over the lot, destroying the garden and annoying the neighbors. We are to have the old hen, but in a new environment—in other words, the intensive hen to go with the intensive garden. There have been wonderful developments along these lines during the

past few years, especially in California, where thousands of people are getting their living in whole or in part from very small holdings. Such people have often found that the best chance for cash income lies in specializing in poultry; and that the way to secure heavy egg production on the smallest space is to engage in the intensive cultivation of the laying hen.

The old plan of turning the hens out to pasture in the neighborhood at large is completely abolished. Mrs. Hen is always "at home" to her callers. She is frequently without a family of her own—no husband or children, but plenty of brothers and sisters. Infertile eggs are preferred in the market, and sometimes command a superior price. For the increase of the flock, setting eggs are purchased; or, more frequently, day-old chicks, which are turned out by the million in large hatcheries. The egg-farmer specializes on eggs, while others specialize on fine settings and ready-made chicks.

The plan is ideal for the garden home, where hundreds or thousands of families may be living on lots ranging from a quarter of an acre to one or two acres in size; and where the object of the small, neat, well-kept poultry house is to supply the family with plenty of fresh eggs and fat chickens to go with the other products of the place in making up the elements of the luxurious table. There are so many methods of intensive poultry culture now in vogue that it is difficult to do more here than to indicate the place of the laying hen in this new way of life. It is plain, of course, that we must have eggs, and we must have chickens; just as we must have the nicest vegetables and fruits, and all kinds of delicious jams and preserves; and it is

very important to know that the little intensive poultry house is precisely as practical as the little intensive garden and orchard.

The several systems now contending for popularity differ in their methods of housing and feeding, but they stand together on one fundamental principle, which is the principle of segregation. This principle was the discovery of a Mr. Philo, of Elmira, New York, whose ideas created a furore in the poultry world some years ago. His views were so radical as to arouse the scorn of professional poultrymen, but the promised profits were so alluring as to induce thousands of novices to go into the business in their backyards. The Philo plan provided for a unit of six hens, kept in a pen 4 x 6 feet, and never allowed to run at large. These units, of course, might be multiplied indefinitely. It was claimed that the plan would result in a very great increase of egg-production as compared with the old methods, with cash profits in proportion. Strange as it may seem, the plan was not disappointing, so far as egg-production was concerned. Hens kept in this way were far more prolific than an equal number herded in large flocks and permitted their freedom. For those who desired to keep but a few hens for home use, the Philo system was entirely successful; but it broke down when extended to large proportions because of the immense detail and back-breaking drudgery involved in caring for many small coops. Eggs were produced in satisfying quantities, but at a cost which made it impracticable from a commercial standpoint.

The valuable lesson which Philo taught the world was that a few well-bred, well-fed, well-cared-for fowls,

segregated and kept in close confinement, would produce more eggs and earn more money per hen than could be realized by old-fashioned methods. In other words, the modern intensive hen is a better business proposition than the ancient promiscuous hen. Many enterprising poultry experts proceeded to build on this principle, with excellent results. My own favorite among them all is Charles Weeks, of Palo Alto, California—a man of such distinction in his line of work, and so good a prophet and exemplar of the theme of this book, that we must pause for a moment to note his significance in the movement.

Mr. Weeks was born on a farm in Indiana, and fell deeply in love with the poultry game at an early age. In spite of this, he turned to the big city for his opportunity, like many other country-bred boys of liberal education. He found no difficulty in getting remunerative employment, first in Chicago, then in New York; and doubtless would have made his way in city life, but he was distinctly country-minded in temperament and never quite satisfied with life among the skyscrapers. Passing up Fourth Avenue one day, his ears were assailed by the welcome sound of cackling hens and crowing cocks announcing the annual poultry show in Madison Square Garden. He bought a ticket and went in to feast his eyes on the poultry aristocracy of America. That experience rekindled his early love, and spoiled him for the city; his heart was set on egg-farming as a profession. I use the word "profession" advisedly, because Mr. Weeks had thought of it from the beginning as something that should be approached and dealt with in the highest professional spirit, with



INTENSIVE POULTRY CULTURE

The Charles Weeks System, universally used by the Little-Landers of Runnymede (near Palo Alto, California) where 1,000 laying hens are kept upon a single acre, with room for Home and Garden



the advantage of all available knowledge. With this purpose in view, he turned his back on the city, going first to Indiana. He soon decided, however, that California was the better field, and it was there, after a hard struggle covering a period of a dozen years, that he finally evolved into a thoroughly successful egg-farmer and expert authority on the subject.

Mr. Weeks tried many different methods. His housing and feeding plans were never precisely alike for any two successive years, until he evolved his present system in 1916. When he began, he thought ten acres a small farm for his purpose. When he ended his experiments he had demonstrated that one acre was ample for an average family, and two or three acres about all that should be undertaken under any circumstances. He had satisfied himself that he could subsist on even less than one acre—possibly so little as one-half or one-quarter of an acre; but he would not like to do so, nor would he advise any one else to undertake it with a view of getting their entire living, and a really good living, from the land. I mention these lower figures only as a means of emphasizing the very intensive character of the system worked out by him, and widely adopted throughout the length and breadth of the Pacific Coast.

The Weeks poultry system is ideal for the home-in-a-garden because it occupies so little space. The unit he arrived at after years of experimenting with the segregation principle is twenty hens and no rooster—that is, for house and market eggs. These twenty hens are confined in a house 8x8 feet, or 64 square-feet; 5 feet high at the rear; 7½ feet in front—(open wire front); and 3-foot roof projection, to shut out the rain

and furnish protection for the attendant. The object of the system is to economize labor to the last degree. This is accomplished by a unique feeding system which can be operated wholly from the outside. The eggs are also within easy reach from the front door and it is rarely necessary to enter the house, even for cleaning, which is done with a long-handled rake. One peculiar feature of the system is that clean sand is used on the floor instead of straw. This makes it very easy to clean the pen with a rake, but the principal object is to avoid the dust which arises from the hen's scratching in the straw, and which is a prolific cause of disease.

Mr. Weeks is a profound believer in the efficiency of a combination of green food so nicely mixed, chopped and served that it does, indeed, look good enough for anybody to eat. This, as well as the dry food and water-basins, is kept constantly before the little flock. There is no lack of exercise, because the pen is arranged in such a way as to keep the hens very active in the course of the day's work. It is important to quote him at this point:

"Twenty hens, well bred, well fed, and with quarters kept sanitary in this little pen, are good for at least \$2.00 per year, net profit above all expenses. These twenty hens have nice sharp sand upon the ground-floor and roosting boards, which is raked clean regularly. They have dry mash and mixed grain by them continually; they can stick their heads through to the green trough outside and eat green feed every hour during the day; they drink water from clean, galvanized buckets on the outside; they dust in the sand; they jump up to the feed-hopper; they jump down again to

the green-feed trough; they run to the water; they hop up to the egg boxes (which, by the way, is the most important move of the day), and after depositing their board bill and rent, plus the extra profit, they jump down and up again to the perches for an afternoon rest, or stretch out in the afternoon sunshine which comes in through the western window. Their whole day is given up to their own individual care; and with all the necessities before them, all the time is available for making eggs. With their morning sun-bath and noon sand-bath, free from draft or foul, dusty air—with all these ideal conditions—they have got to either 'lay or bust!'"

The home gardener who wants eggs and chickens only for home use, would need but a single unit under this plan, but the housing can be indefinitely extended, and does, as a matter of fact, extend for hundreds of feet in many instances. The drawbacks of the Philo system are not present here, because of the very great economy secured in all the operations of the system. An average family can readily care for 1,000 hens. In fact, Mr. Weeks is now surrounded by hundreds of families working on the basis of 1,000 hens on a single acre, with ample room for the home and home garden, as well as all the green food required for the poultry. Locally, the system has been almost universally adopted.

Mr. Weeks has an annual gathering at his home, attended by representative poultrymen from all over the Pacific Coast, so that for years his methods have been brought under the white light of publicity and criticism freely invited. It should by no means be inferred that everybody agrees with him in all details. On the contrary, many who admire and use the system,

modify it in certain respects—usually in the direction of increasing the size of the unit flock, or adding small yards at the rear of the house, on the theory that it is a trifle rough on the hen to keep her constantly confined; that she should have a chance to get out occasionally and kick up her heels. Mr. Weeks believes that space is used more profitably by making it produce such things as kale and mangel-wurzel beets, and that while the privilege of the run of the yard may indeed be agreeable to the hen, it adds nothing to her health or efficiency.

The thing that interests us just now is that while we are to deal with the good old family hen, she is to be placed in entirely new environment. Otherwise it would, perhaps, not be feasible to create thousands of garden homes around all the great cities of the land with such density as to enable them to enjoy all the benefits of the needed public utilities, and such other advantages as we covet for the home-in-a-garden.

A thoroughly representative experience for our present purpose is that of John W. Gottsch, of San Ysidro, near San Diego, California. His home occupies about one-third of an acre, and is surrounded by near neighbors on every hand. He is busily engaged, not only with his trade as a plumber, but also as manager of a public water system, with many consumers. Necessarily his poultry venture is a side issue, like his vegetables, berries and fruit trees, rather than his main support. He does, however, realize all the advantages we are claiming for the home gardener of the future—not only by saving rent and reducing living costs to the minimum, but by enjoying all neighborhood advantages and proximity

to a large city. He keeps more hens than needed for his home use—following the Weeks plan; and here are the exact results for the year 1919:

Credit.

Feed on hand December 31, 1919	\$ 57.87
Total cash received for eggs	773.61
Total cash received for poultry	103.54
Eggs used at home	38.45
Poultry used at home	15.38
Value of stock on hand Dec. 31, 1919:	
87 hens at \$1.20 each	104.40
136 pullets at \$1.50 each	204.00
6 Bantam hens, at 35 cents each	2.10
5 cockerels, 20 lbs. each	6.40
2 cocks, 10 lbs. each	1.50
1 Bantam cock35
	\$1,307.80

Debit.

Total outlay for feed, chicks, disinfectants, sand, freight, etc.	\$697.42
Value of 116 hens on hand Jan. 1, 1919	137.50
	834.92

Profit for the year

\$ 472.88

Here is a cash income equal to nearly \$40 a month; possibly enough to pay the "store bill" of a family situated like that of Mr. Gottsch. Probably it would more than keep up the monthly payments on the average garden holding near any of our large cities. I see many a commuter coming to town with a basket of fresh eggs, to be delivered to some private customer at full retail price, and I observe the smile of satisfaction as he pockets the money, saying to himself: "So much more to apply on the little home." Furthermore, the income from surplus eggs would enable many an individual, either man or woman, to retire comfortably after pass-

ing middle age, though it might be necessary to increase the number of units, which would be entirely feasible for one having the whole day at his disposal.

I am thinking all the time of those who will say: "Oh, yes, it can be done in California, but nowhere else." And my uniform reply is: "It can be done anywhere in the United States, and in many places better than in California." The rest of the country does not need the California climate half so much as it needs the California spirit; or, if I may descend to the vernacular, the California "punch."

Yes, the home-in-a-garden will have plenty of fresh eggs and fried chicken, to say nothing of chicken in many other forms. But this is by no means all that is to go on those luxurious tables. It will not do to confine our diet to one kind of meat, however good it is.

CHAPTER XII

THE RABBIT IN THE GARDEN ECONOMY

THE place of the chicken is well established on every bill-of-fare. Not so the rabbit—at least, in America. And yet, rabbit meat is as white and delicate as chicken, rather more nutritious, and now often preferred by physicians in prescribing for convalescents; and the rabbit is an ideal kind of livestock for the garden home. Like the chicken, it lives largely from the surplus greens in the garden, and is amenable to the most intensive methods of housing and feeding, so that it may be kept, even in goodly numbers, on a very small space of ground. But, unlike the chicken, the rabbit requires a friendly propaganda to make its virtues understood and enable it to win its rightful place in the household, the restaurant, and the hotel. During the past few years this propaganda has come into being in the form of a strong national association, with many local branches and a growing membership, with annual rabbit shows in many leading cities. It has its literature, periodicals, and specialists in different departments. During the War it attracted the attention of the Government, which turned to this humble quarter as a means of increasing the country's meat supply.

In Europe, the rabbit is an old story. In 1912, for

example, France sold, through its municipal market alone, some 80,000,000 rabbits, and millions more were distributed through other channels. Before the War, London was using 500,000 a week—mostly imported from Belgium, with a net profit of about a million dollars a month to the Belgian producers.

Formerly, the wild rabbit had been regarded as the worst of pests in Australia, and was exterminated by every possible means. But, during the War, Australia was commanded to conserve her rabbit supply. The animals were killed on an enormous scale, frozen and shipped to the armies in France.

In the United States, until quite recently, rabbits have been treated as pets; they had no economic standing whatever. Now they are rapidly coming into their own as a standard meat in the market, while rabbitcraft is developing along scientific lines, and more and more offering a delightful occupation for men and women. Their place in the economy of the garden home is unquestionable. They add both quantity and variety to the luxurious table, while enhancing the fascination of the daily tasks and swelling the joy of the family.

The new vogue of rabbitcraft should not be confounded with the wild boom in Belgian hares which swept over the country a quarter of a century ago. That was purely speculative in its conception, and ridiculous or tragic in its consequences, according to the temperament and means of the persons involved in the enterprise. Some of them paid as much as a thousand dollars for a pedigreed buck. Nearly all imbibed the full spirit of Colonel Sellers, and came to believe "There's millions in it!" Everybody raised rabbits, but scarcely



RABBITS FOR MEAT AND FUR

1. Dutch rabbit. 2. Himalaya. 3. Belgian hare. 4. American Blue. 5. Angora. 6. Checkered giant



anybody ate them. The game was to raise fine breeding stock and dispose of it at fabulous profit to a new group of beginners, all of whom expected to get rich in the same way. So long as everybody was a buyer, and nobody a seller, the business flourished like unto the proverbial "green bay tree." But, when conditions were reversed and no one bought, while everybody was trying to sell, the business fell like a house of cards.

The new movement is wholly different. It aims first to supply the family with delicious and wholesome meat, and then to cater to the limited but growing demand in the public market. Probably this demand is stronger on the Pacific Coast than in the East, since the rabbits are more in evidence there, both in the market and in daily quotations; yet, one now sees them in Washington, New York and Boston, and dealers say they are gradually gaining in favor. The staple breeds are the Belgian Hare, New Zealand Red, and Flemish Giant; but at a rabbit show one sees a bewildering variety of all colors and sizes—some of them frankly fancy stock, raised mostly for pleasure—yet all perfectly good for eating purposes.

Rabbit meat is served in every way that chicken is served—fried, stewed, or stuffed and baked like a turkey. The rabbit contains very little fat, and for that reason is one of the most digestible of meats. In later pages we shall deal with the mechanics of the subject, and see something of the best scientific methods of feeding and housing, as these have developed during the past few years since the American friends of the rabbit bent their minds seriously to the subject.

There is no more enthusiastic friend of the rabbit

industry than E. W. Nelson, Chief of the United States Bureau of Biological Survey. In Farmers' Bulletin 1090, issued by the Department of Agriculture, under date of March, 1920, Mr. Nelson said:

"The saving and earning possibilities of rabbit-raising are illustrated by the following concrete examples of what has actually been done:

"One resident of Kansas City, Kansas, has raised 300 to 400 pounds of rabbit meat a year for his own table at a cost of only 8 to 10 cents a pound. A large religious institution in Nebraska that has raised rabbits instead of poultry reports the meat more satisfactory than chicken and the experiment profitable. According to a former county commissioner of the State of Washington, rabbits were grown on the county farm to provide a substitute for chicken for the county hospitals; the initial stock, numbering 119 rabbits, increased to 1,200 in 10 months, besides those used in the hospitals. A high-school boy in Iowa who breeds registered stock on a space 33 feet square in his back yard, raised and sold enough rabbits in 1918 to clear more than \$1,200. An Ohio farmer sends more than 400 pounds of rabbit meat a week to city restaurants, yet is unable to meet the demand.

"These are not isolated cases; they are simply examples of what has been done in rabbit raising, and are an indication of what this industry is likely to become when it is generally understood."

However, I am not now dealing with rabbitcraft as a source of cash income, but only as a natural and logical means of catering to the meat supply of the garden home. I cannot, however, refrain from mentioning the

experience of an acquaintance who found that from the increase of ten rabbit does occupying but a small space in his yard, he was able to provide the entire meat supply of his family. This does not mean that they ate rabbit meat exclusively, though they ate it often, and insisted that it was their favorite meat. They had, however, many more than they could consume and sent the surplus young stock to market to be sold for cash. This cash was sufficient to buy all the beef, pork, mutton and fowl that they required—even the Thanksgiving turkey and Christmas goose. Thus the rabbit solved their whole problem of the high cost of living, so far as meat was concerned.

I am a strong believer in the possibilities of the rabbit industry as a source of cash profit to large numbers of producers; but know from experience and observation that there are certain conditions precedent to the realization of this hope. To begin with, the rabbit must be more widely known and generally appreciated, so that in this country, as in Europe, millions of people will look to it as a part of their diet, as they now look to beef and chicken. This condition is coming a little nearer year by year, and when it shall be fully developed will create an enormous demand for the toothsome and wholesome rabbit.

Another important condition will be the solution of the problem of canning rabbit meat so that it can be shipped long distances and kept indefinitely, like other canned products. Some admirable experimental work has been done in this direction by Gordon Phair, of Los Angeles, and perhaps by others. I have often had the pleasure of serving his potted rabbit to my friends

at the club, and listening to their expressions of surprise and delight. "It beats potted chicken out of sight!" was the common remark. It sold well, too, in the finer stores of New York. This, however, was only experimental—encouraging, but not conclusive. To build a great industry would require a large and regular supply of raw material, ample manufacturing facilities, and good publicity, with adequate financial backing. Such an industry would be quite ideal in connection with a garden city, or a series of garden cities, provided there were large numbers of people who cared to venture beyond the supply of their own tables. The rabbit I am sure would do its part, and do it well.

Another very interesting aspect of the economic rabbit is its value as a source of fur supply. Few realize how extensively it serves this purpose now. Perhaps some people who are wearing various kinds of "Coney" and imitation "Seal" are really much better acquainted with the rabbit than they realize. The common rabbit fur is used in vast quantities in the making of felt hats, and the hide is converted into glue. While Australian rabbits are a large source of this supply, such skins bring only two or three cents apiece, which would not, of course, be profitable for small domestic producers.

The hope of the fur industry is in the finer varieties produced by scientific selective breeding. Some rabbits have fine fur, but thin skin; others have thick skin, but poor fur; others have both good fur and thick skin, but with the fur poorly set. The selective breeder aims to produce a rabbit with a thick skin and a good fur that is well set.

Wonderful progress has been made in this direction

—especially in the United States, though France and Japan have developed certain kinds of fur-bearing rabbits for which there is a large and steady demand at fairly remunerative prices.

In some parts of the United States rabbit meat can be produced all the way from six to fifteen cents per pound, and sold at twenty to forty cents a pound at different seasons. While this does not return much profit to the producer, unless he is operating on a very large scale, it does enable him to make money from the sale of the furs, since this is clear gain, if he can produce a fur which commands a good price. There is a kind of long-haired white rabbit producing fur that the layman could hardly distinguish from the white fox so commonly worn by young women. There is another that closely approximates the expensive silver fox. The beautiful short-haired Himalaya rabbit, when bred up to fur-bearing capacity, as has been done, makes a pretty good ermine, and when dyed passes for seal, though frankly called "near seal." I was once asked to indicate which of two cloaks was priced at \$800, and which at \$80, as they hung side by side. I picked out the wrong one. It was rabbit fur!

Some of the finest samples, representing a dozen varieties of fur-bearing rabbits, obtained by selective breeding, were submitted to large manufacturers in New York and Chicago, who made a thorough examination of their quality from every practical point of view. The verdict was that a great market, at prices ranging from fifty cents to three dollars per skin, awaited such products, provided that they could be made permanently available upon a large scale. This is a condition which

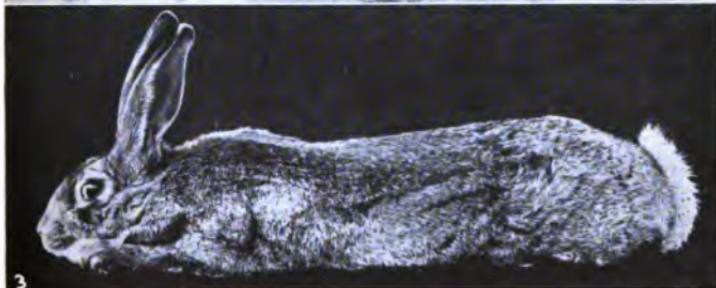
could not be met—or, at least has not, as yet. The development is somewhat retarded by difficulty in getting new varieties—the product of many crossings—to breed true. When this has been done, there is no doubt that the industry will grow to profitable proportions.

Here we are interested, however, not so much in rabbits as a potential industry of large proportions and a means of livelihood for great numbers of people, as in the place of the rabbit in the economy of the garden home. Even from this narrow point of view the fur is by no means negligible. It interests our home gardener in two ways. First, he and his family will utilize the fur in making their own garments. Perhaps some people will wear furs more extensively than they have formerly been able to do. It is worth while to quote the following from the bulletin of the U. S. Biological Survey:

“The better kinds of rabbit skins are used for making fur garments, which, when made up, are commonly sold as Coney, but often under other trade names. White skins are made up in imitation of Arctic fox, or sheared in imitation of ermine. Gray rabbits are dyed brown or black, and become Baltic black fox, or Baltic brown fox. Seal dyed, they become inland seal, electrical seal, or near seal.”

The circular adds: “These garments, while handsome and comfortable, have little durability, and are, therefore, cheap.”

If an article of wearing apparel that you can get at slight cost out of your own rabbitry is “handsome and comfortable,” it doesn’t matter much if it is not so “durable” as the article you would buy at the store at



TWO FAVORITE BREEDS AND THEIR HOUSING

1. New Zealand Red. 2. Rabbit hutches used in government work. 3. Gray giant

a price ranging anywhere from \$100 to \$1,000. In fact, it would be interesting to have a democratic fur in which everybody might be "handsome and comfortable," and which may be frequently renewed without serious expense. This is the first point of interest to the home gardener—not only that the rabbit increases and enriches the food supply, but also helps out the wardrobe of his wife and daughters.

Another distinct development that has occurred, and may occur very often in the future, is that this pretty rabbit fur supplies the basis for a "cottage industry," in which many women of taste may engage in a small way, upon a scale proportioned to their enterprise and industry. Mrs. J. M. Sherman, of Los Angeles, has pursued this plan successfully. She has taken even the common varieties of rabbits, some having very beautiful skins, and has made them into sets of furs that have proved to be in lively demand and at good prices. She has found it to be a most interesting and profitable thing to do. There is no reason why others can not do the same thing. They will find a market at their door for all they can produce, if their experience is like that of others who have already adopted the plan.

Thus we have chicken and rabbit meat for our luxurious table, but that is not all. We have not yet called the roll of the small livestock that goes with the home-in-a-garden.

CHAPTER XIII

BROILED SQUAB, AND THAT SORT OF THING

THE squab, of course, is frankly a luxury, rather than an article of staple diet. Some people never get it at all, except, perhaps, when convalescing from some serious illness and ordered by their physician to partake of the most delicate of meats for a brief season. The comparatively few who do include broiled squab in their bill-of-fare do so but rarely, and then perhaps with a guilty sense of self-indulgence. Really, there are but two kinds of people who can afford this luxury—millionaires, and those who rejoice in a home garden. Millionaires can do it because they have the price; home gardeners, because they have the squabs.

As a matter of fact, broiled squab ought to be as common as are canned vegetables and fruit in the average household. It belongs to the luxurious table that awaits millions of our best families in the "Invisible City of Homes" surrounding every urban center in the land. These best families are the essence of American society. They do the day's work in every department; pay most of the taxes; bear the heat and burden of the day in war and in peace. And nothing is too good for them—not even broiled squab. Bless their hearts!—they are going to have it, and everything else that goes with a thor-

oughly well-provided life, socially and economically, intellectually and spiritually.

I put the emphasis on the squab, because it so palpably represents the good things that the few now have and that the many ought to have, and may readily have when they shall have learned to make the most of their environment.

Coming to the practical side, we find that the miniature pigeon-loft, sufficient for the needs of the average household, goes admirably with the garden home. It is another of the industries that is now handled intensively, as we have seen in the case of chickens and rabbits. Pigeons are easily cared for and less liable to disease than some other kinds of fowl, because of their good habit of taking frequent baths. It seems like a miracle, but in from four to six weeks the fat little squab, weighing about a pound, is ready for the table. It is perfectly feasible to have squabs once or twice a week, instead of perhaps once or twice a year, as is the case of most people who have to buy them in the market or restaurant. They may be cooked, of course, in several different ways, and are often stuffed and baked. Served in this manner, with plenty of fresh vegetables and fruit from the garden, they do very nicely as the *pièce de résistance* for even ceremonial dinners, when visitors are entertained, and the family wishes to make the best impression.

There are many kinds of pigeons, including the well-known Homer. The Red Carneaux are perhaps the favorite in the market. The biggest member of the family, curiously enough, is called the "runt." This produces a 2-pound squab, very fine for home use, but

not so profitable for selling. The most successful pigeon pen in California contains fifteen pair. This is 6 ft. wide, 6 ft. high, 5 ft. deep, and is inclosed in a flying pen 8 ft. long and 6 ft. wide. The flock increases, on an average at the rate of 12 birds a year for each pair of old birds, and the young ones begin to breed in about five months. The old stock is kept for breeding, and the young birds consumed or sold.

The best pigeon story I know is that of Clarence Ray King, of Hayward, California. Since he began purely as a home gardener, raising a few pigeons in his yard, while engaged at his trade as an electrician, and afterwards became a thorough master of the pigeon business, and finally decided to give it his whole attention, it seems well worth while to relate his experience. We are now speaking of pigeons in terms of the luxurious family table, and yet it is possible that many a man who builds his first pen with nothing but that in view, may discover that he "builded better than he knew" in the way of a livelihood, as was the case with Mr. King.

In 1905, when 23 years of age, Mr. King was employed as an electrician in Los Angeles. One day he was sent into the suburbs to repair a meter, and discovered a good-sized pigeon-loft filled with Homers. As a boy, he had had a few of the common pigeons, and the sight of this loft revived his interest in the subject. He decided to begin again, in a small way, in his father's yard. After a while, he had 500 birds in a lot 50x150 ft., and these were so profitable that he decided to increase his operations, which he did, by getting the use of an adjoining lot. When his flock increased to 2,000 he found it was paying him a regular income of \$150

per month. He then decided that the time had come for him to cease working for the electric company and devote himself exclusively to the fortunes of Clarence Ray King. He also decided to move the scene of his operations and interest some capital. His brother joined him, making an investment of \$8,000, and with this they established themselves at Hayward, 15 miles from San Francisco, which is a particularly good market for squabs.

They purchased six acres of land for \$6,500. Mr. King pursued his labors as breeder and expert, soon winning a high position in the craft, and becoming president of the California Pigeon Club; his brother attended to the marketing. While they own six acres, most of it is devoted to trees, and only about one and one-half acres to the squab industry. Their "pigeon-loft" as it is called in deference to custom, is not a loft at all, but a low structure consisting of a collection of pens built after the manner already described. It occupies a trifle more than one acre, and houses 14,000 birds. Its output averages 600 squabs every five days, and its net earnings are something like \$1,000 per month, the greater portion of which is derived from market squabs, though breeding stock also is sold, not only to customers throughout the United States, but often to foreign countries.

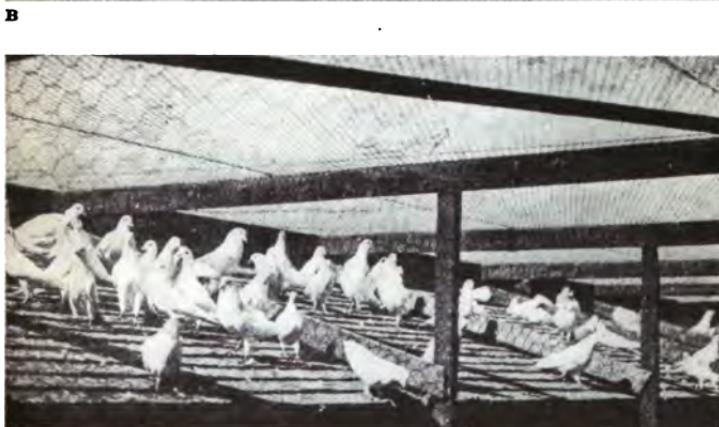
The facts in regard to Mr. King's experience are thoroughly authenticated, and might naturally inspire many people to follow his example. Those so inclined should follow all of it, not part of it. They are again reminded that Mr. King started in a very small way, intending to raise pigeons for home use, and as an agree-

able hobby. He thought if it increased his income it would be all right, but he had no expectation of abandoning his good trade and salary as a skilled electrician. After a few years he became expert, and discovered that there was a good market for squabs at popular prices. Steamship lines and railroad dining-cars consume a great many dozens daily. They are also in demand for formal banquets—6,000 of them having been used in one single occasion in Los Angeles; and first-class hotels and restaurants serve them regularly. When Mr. King had mastered all details of the subject, he was ready to drop his hold upon the payroll and stake his future upon an independent business.

By the way, he does not think California the best place to raise pigeons. He says New York is the greatest market in the world; and that the Southern States, all the way from Virginia to Florida, where the climate is mild, and where the markets of the Eastern seaboard may be reached in a few hours' time, offer the finest field.

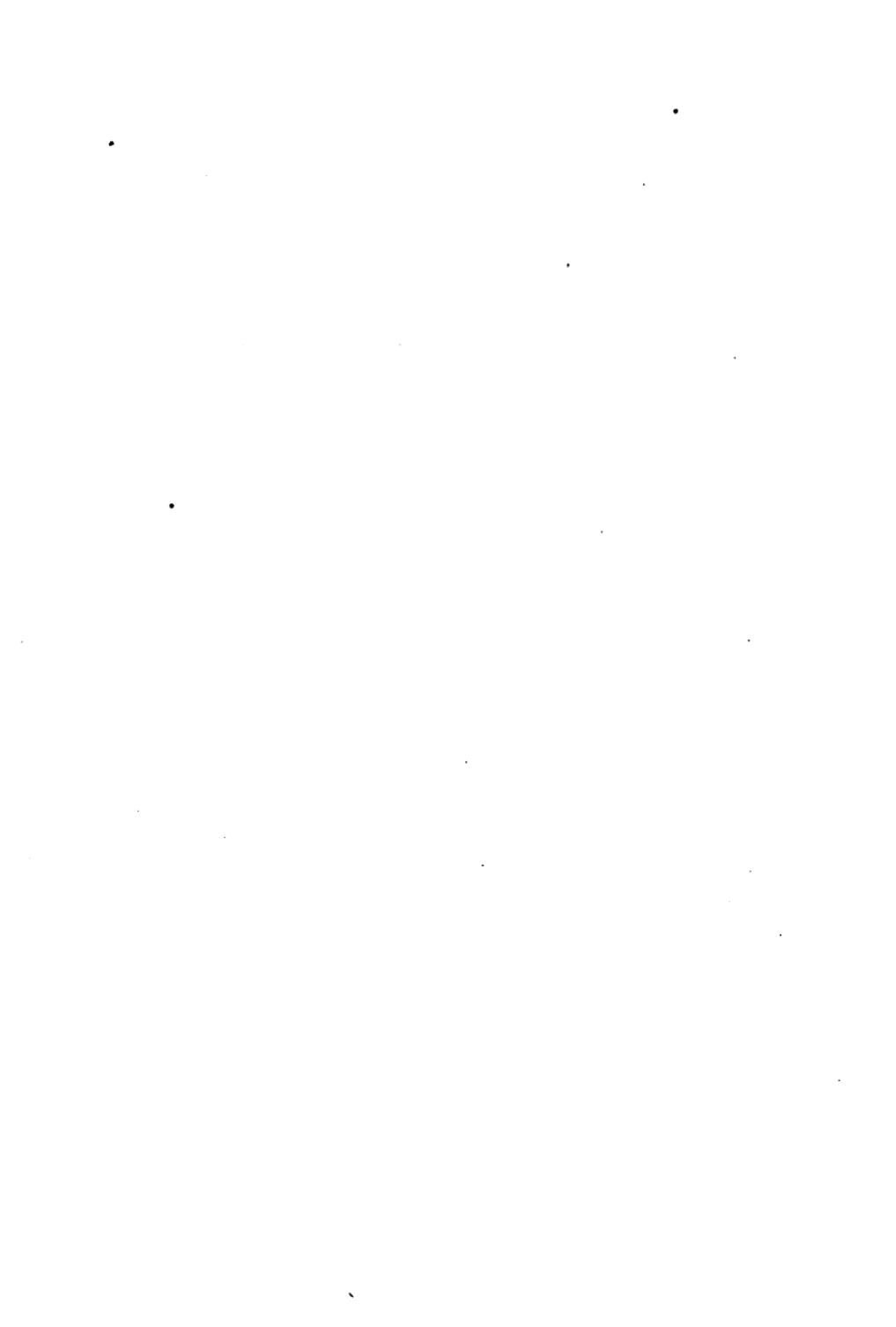
But the squab is not the only unusual item that will come upon the luxurious table of the many in the future. There are ducks and turkeys, both readily susceptible of intensive cultivation. It is claimed for the duck that it is untroubled by vermin and not subject to illness; quickly reaches maturity, and always finds a ready market. It is easy to handle. Fences 24 inches high will confine it safely. Ducks are not largely consumed, except by certain elements of our population. The reason more people do not eat them more often is because they do not get the chance.

I am sorely tempted here to tell the story of another



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INTENSIVE CULTIVATION OF THE MARKET SQUAB
A. Red Carneaux. B. Silver Kings. C. White Kings



superman of the little lands, Mr. Otto Reichardt, who raised white Pekin ducks at the rate of 40,000 to ten acres, and whose facilities and operations were all on a magnificent scale. Like Mr. King with his squabs, Mr. Reichardt's duck enterprise started as a side issue on a small lot, while he was employed at a trade. In 17 years this side issue developed into the main issue, with a plant costing \$250,000, doing an annual business of \$350,000, and with net profits that enabled him to live in an aristocratic suburb, and go the gait with the best of 'em. It is indeed a fascinating life story, but not particularly applicable to the immediate theme, except as showing that plenty of ducks for the enrichment of the luxurious table may be kept successfully on a very small space by modern intensive methods.

Probably most readers will be surprised to be told that the lordly turkey, notorious ranger that he is, is also subject to intensive cultivation, and therefore eligible to a place on that luxurious table that is the rightful heritage of the home gardener. Mr. and Mrs. W. W. Hevener, of San Ysidro, California, raised a goodly bunch of turkeys year after year, as one of the interesting incidents of their acre home. The little turks were raised in a coop 10x12 ft. and, when grown, made their home in a eucalyptus grove, where they could roost in the trees. At all times they were confined to a small space, which did not, however, interfere with their growth, as they ranged in weight from 8 to 20 pounds. Mr. Hevener has turned off as many as thirty at the holiday season, and found them very profitable sellers, as well as exceedingly good to eat.

Even the family pig can be raised in the garden-home

plot in a perfectly sanitary way, and the family thereby supplied with pork and bacon. This proposition has been worked out successfully by the United States Department of Agriculture, as we shall learn, when we pass from philosophy to programme; from the consideration of the home-in-a-garden as a way of life, to the consideration of its mechanical aspects; or, as the reader may perhaps say, when we descend from the blue sky to the solid earth.

In the meantime, we are not yet through with our luxurious table. There are two staples yet unaccounted for—milk and sugar.

CHAPTER XIV

“AND THOU SHALT HAVE GOAT'S MILK”

“Thou shalt have goat's milk enough for thy food, for the food of thy household, and for the maintenance of thy maidens.”

Proverbs.

MILK, butter and cheese are as essential to the economy of the garden home as fruit, vegetables, eggs and meat. Our scheme of production for the family that has set its heart upon the largest measure of independence and self-sufficiency would be woefully incomplete if it could not solve the problem of supplying itself with those necessaries. Of course, there is the good old family cow, which will doubtless be in evidence in the garden city of the future; for it is possible to keep the cow in an intensive way, and to work out a coöperative plan of pasturing. Indeed, the man who first aroused my interest in the possibilities of little-landing kept a most adorable cow on his third of an acre, and that cow was the largest source of his cash income, even though she rarely stepped outside of her diminutive barnyard.

The modern milch goat is the thing for the garden home, since five to eight goats may be kept at the cost of keeping one cow; and since two good goats will maintain the family milk supply throughout the year.

To speak up for the milch goat is, of course, to put one's self immediately on the defensive. The average

reader will think of the Harlem goat and all it implies —of Shantytown, and the diet of tin-cans and billboards. Undoubtedly the goat is popularly regarded as a social outcast—at least in America. The best thing that has been said of it in the past is to call it “the Poor Man’s Cow.” But in recent years the English nobility have taken to goats and formed a society to promote its interests, under a motto revised to read “the Wise Man’s Cow.” The truth is that the goat, when understood and well-cared for, is one of the most interesting and useful of domestic animals, and has been so regarded in many countries from the dawn of history. The Bible is full of allusions to goats, their milk and meat. And in that and much other ancient literature they are always referred to in terms of respect.

In this country it has happened that only the common “Nanny” has been much in evidence. She has usually been the makeshift of the poor, with no influential friends to proclaim her virtues, though in recent years it has been somewhat different. The public has begun to discover that there are goats and goats, including such aristocratic individuals as the Swiss Toggenburg, the Saanen, and the Anglo-Nubian, with its distinguished Roman nose. Enthusiastic breeders and promoters have sprung up, with their literature, their periodicals and their societies, in consequence of which the worthy milch goat is forging rapidly ahead in respectability. In California, at least, the goat has found its friends among the most refined and cultivated members of society. The most prominent among these is a young lady belonging to a well-known family, who resigned her position as teacher of Greek and arch-



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POPULAR BREEDS OF SWISS GOATS

The Toggenburg Kids (upper picture) look more like fawn than like common goats. The Saanen does (bottom) assure the milk supply.

æology in one of the universities in order to devote her time and attention exclusively to goat-raising.

A good goat gives daily from two to four quarts of milk of superior quality. It is entirely free from the germs of tuberculosis, wonderfully nourishing and wholesome, and many who can not digest cow's milk have no difficulty whatever with goat's milk. This fact is coming to be generally recognized by physicians, with the result that goat's milk is in great demand for babies and invalids. It also sells in the markets for from two to three times the price of cow's milk. This is doubtless partially due to its scarcity; but also to its superior quality for certain purposes. One sanitarium offered a dollar a quart for a goodly supply, and from forty to fifty cents a quart is not an uncommon price for it to bring in large cities. The only valid objection to goat's milk of which I have knowledge is that it spoils one's taste for cow's milk, which makes it inconvenient if one is so situated as to be unable to get goat's milk.

The first virtue of the goat, from the standpoint of the home-in-a-garden family, is that it can be stabled in a very small space. And the stable is so cunning—almost like a doll's house! When I visit Luther Burbank, I make a bee-line for his goat stable. He favors the white Saanen; and his goats stand on their hind legs with their fore feet on the top rail of the fence and welcome the visitor by rubbing their noses against his coat-sleeve. It should be said that the goat is a family pet. People come to love them dearly, and their kids—usually twins, but sometimes triplets—are the cutest little playfellows in the world. It is an endless joy to see them frisk and cavort about their small barnyard,

or in the pasture. About 45 per cent of them are does, which are retained for milk purposes. Thoroughbred bucks are usually sold, and always for high prices, but the grades or the common varieties are destined to serve as Sunday roasts. There is no finer meat than a kid roast—somewhere between veal and lamb, and a little better than either.

Next to economy of space, the goat's claim on the home gardener is economy in feeding. Very careful experiments were made at the State University Farm in California, and it was found that, buying every ounce of feed, the cost averaged only about three cents a day. One goat yielded an average of three quarts of milk a day for 310 days; and another over three quarts a day for the same period. In the first case the cost of the feed was about one cent per quart; and in the other less than a cent. This was on the basis of pre-war prices of feed, which were normal.

There is no particular difference between the quality of the milk of the thoroughbred and that of the common "Nanny" when they are equally well cared for. This is so true that one of the greatest breeders and advocates of thoroughbred stock has written:

"Despite my association with the Toggenburg breed, my sentiments can be most truthfully summed up by borrowing the words of the popular song:

'Any little goat that's a *nice* little goat
Is the right little goat for me.'"

There is, however, an important advantage in the thoroughbred in the matter of quantity, not only of the average daily yield, but also in the period of lactation.

In the thoroughbred this period is from nine to ten months, against three or four months with the common native goat. Hence it is most desirable that the home gardener should have a thoroughbred goat, though not necessarily a 100 per cent thoroughbred.

The most serious difficulty in meeting this demand is that blooded goats are scarce and dear in the United States. There are probably not more than 3,000 pure-bred milch goats in this country to-day. Parenthetically, it should be said that the Angora is not properly classed as a milch goat, but is kept for its beautiful fleece. Of the Swiss goats the Toggenburg is the most numerous, and the Saanen comes next. The Anglo-Nubian is gaining ground, and its friends are most enthusiastic—partly because of the patrician Roman nose, but more because of their confident claim in regard to the "odorless" buck.

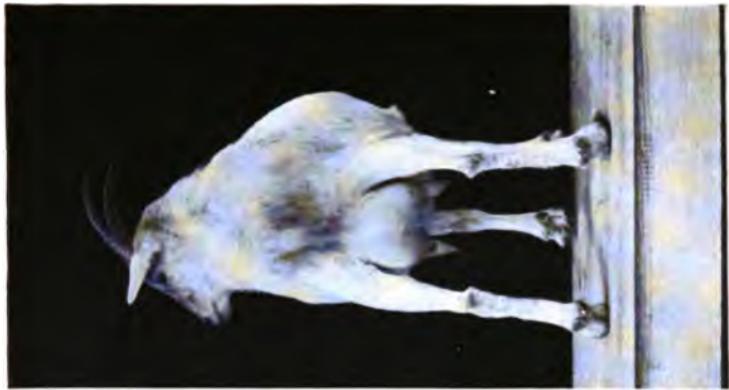
It should be said that all of the imported goats are quite different in appearance from the native variety. Usually they are hornless and gifted with graceful lines, so that they more resemble young deer or fawns than the common backyard goat. This is particularly true of the Toggenburg, because of their fawn color. The Saanens are pure white, and the Anglo-Nubian black, or reddish black. It is conceded that the Toggenburg gives the most milk, the Anglo-Nubian the richest, while the Saanen represents the middle ground between the two in both qualities. Doubtless everybody knows that the finest cheese in the world is made of goat's milk, and appreciates the fact that home-made cheese is a delightful and nutritious feature of the household diet.

The price of pure-bred goats, ranging from \$75 to

\$200, is prohibitive for many, even if the goats are available in sufficient numbers to meet the very great demand that may be anticipated in the next few years. In this dilemma the question is, What can be done to safeguard the self-sufficient garden home in the matter of milk, butter and cheese? This is a question to which Miss Irmagarde Richards, one of the most successful breeders of Toggenburg goats, and a high authority on the subject, has given much thought and study. She says: "Don't buy a goat, but 'make' one." And continues:

"Go out into the highways and byways and you will find, wherever there is a district settled by foreigners, a fair sprinkling of goats staked on small spaces of green, open ground. Find a fresh goat that you like and buy her. She will probably have horns. She may, or may not, be a good milker; but, at any rate, use your best judgment. If possible, get a doe with a buck kid, and include the kid in the purchase. If you have to learn to milk, and are not much of a success at first, the kid will finish the job for you and so prevent your ignorance from spoiling the doe. At any rate, the doe would the more quickly adjust herself to the new home, if her kid is with her. As soon as the new duties and relationships are established, the kid can fulfill his destiny as a Sunday roast."

The next point in her advice is particularly practicable for the people of a garden city where large numbers are thinking of a little goat dairy. She urges that 50 to 100 families who have bought these common does shall combine in the purchase of a high-priced, thoroughbred buck, and proceed to produce half-breeds,



THE MILK GOAT IS IDEAL FOR THE GARDEN HOME
Milking stand at the government goat farm, Beltsville, Md. The goat is of the Saanen variety (Swiss)



of which about one-half will probably be does. These half-breed does should be bred to the thoroughbred buck, and the next generation will be three-fourths pure, which Miss Richards assures us is pure enough for all practical purposes. In fact, she says that very often it will be hardly possible to distinguish between the three-fourths grade in appearance or other qualities.

In this way an entire community could be supplied with splendid milch goats, and thus solve one of the most important problems of the garden home. The drawback about this plan is that it would require about three years to bring it to fruition, and during that period most people would have to depend on the milkman. Of this aspect of the matter, Miss Richards says:

"A long time to wait for results, do you think? Not so long as you wait for your orchard to come into profitable bearing, and you have some by-products as you go—enough milk to balance the books, at least; a lot of fertilizer of exceptional value; several roasts of the most delicious meat; a soft fur rug or two; and, finally, the sale of the scrub doe herself, when her grade daughter is ready to take her place—not to speak of the fun!"

Apparently there is no other way to meet the demand, except, perhaps, by importation, and that has been hampered by law in recent years; besides, that would involve an expense beyond the reach of the many who will be engaged in building and stocking their garden homes. After all, three years is not long to wait for a dependable and permanent supply of milk at a cost of one to two cents per quart; and milk, too, so

superior to the ordinary kind that it sells for two or three times as much as cow's milk in the market.

In summing up the advantages of goat culture, Miss Richards states one point that will sink deep into many hearts, when she says:

"Still more may one offer as a by-product of this venture that wonderful experience (what goat-keeper has not had an opportunity to share in it?) of watching some little despaired-of baby, whose tiny, claw-like hand has almost relaxed its hold on life, come back from the valley of the shadow; of seeing it return to eat and sleep normally, to grow round and rosy, and to step out into childhood a joyous, husky youngster. To those of us who have stood by and watched that miracle there are no words tender and reverent enough to express our feeling for the Little Friend of All the World."

CHAPTER XV

THE HONEYBEE AND THE SUGAR-BOWL

"Eat thou honey because it is good."
Solomon.

OF all the intensive folk, born for the comfort of the garden home, surely the honeybee ranks first. While associated in most minds with the home in the country, it is by no means of purely rural inclinations. It can flourish in the suburbs; not only that, but in a limited way it has begun to follow the crowd to the congested urban centers. San Francisco, piled up on the tip of a sandy peninsula, harbors hundreds of colonies of bees, most of them in backyards, but some of them on fire-escapes of apartment houses, and some on roofs of skyscrapers. The same is true of New York and other cities. Sometimes hives are installed in offices, the waiting-rooms of physicians, particularly; and dentists say that they sooth the irritated nerves of their patients—partly by their murmurous humming, and partly because the interesting insects induce forgetfulness of self. There are beautiful city homes where bees are kept in the rooms in glass hives, with an aperture at the rear permitting ingress and egress. The bees are no more trouble than goldfish, and require less care than a canary.

At first thought, one would imagine that bees could

find no pasture in a crowded city. Many mistakenly think the city bee subsists on garbage barrels or other unsanitary sources of supply. The truth is that they find flowers and other clean things to feed upon; and it is a well-known fact, of course, that they often travel a long distance for their food. These are extreme instances of the intensive cultivation of the honey-bee, which only emphasize its practical utility in the economy of the garden home.

Sugar, of course, as much as milk, and far more than meat, is an essential in every household. The fluctuating, and often soaring, price of sugar is one of the acute points in high cost of living. The home in the garden should be as free from the exactions of the sugar trust as possible. And if honey does not satisfy every palate, or meet every household need, it can be made to go a very long way in that direction. It is most unusual to hear any one complain of getting too much honey; and quite common to hear people say that they have never had enough. There is no reason in the world why the home gardener should not be as independent in this respect as in the matter of meat, eggs, vegetables and fruit.

As in the case of poultry, eggs and rabbits, the bee industry has its organizations, local and national, its periodicals and literature. It even has its poets and romanticists, as every one knows who has read Maurice Maeterlinck's charming book, "The Life of the Bee." Like all other departments in our new art of little-landing, the honeybee has evolved its specialists and enthusiasts, who find their highest satisfaction in this line of work and enjoy wide reputation as authorities.

Bee-keeping is an important industry, and the principal source of livelihood for thousands of people. During the past few years it has been extremely profitable on account of the unusual demand for sweets, and of the high price of sugar. Bee-keeping, as a profession is not, however, for our home gardener, who wants honey only for the enrichment of his table; wants it whether times are good or bad; and wants it fresh from his own little apiary. Things that are good even when bought from the corner store are somehow infinitely better when produced at home.

The cost of establishing a small garden apiary, including the purchase of bees, and equipment and supplies, is usually about \$50. A good hive should supply from fifty to two hundred combs a year, and readily pay for itself the first year. The cost of filling the family "sugar-bowl" in this way is about two cents per pound—counting nothing, of course, for one's own time and labor, which is merely incidental to the conduct of the home garden. The market price fluctuates, but is rarely lower than 20 cents a pound; and usually higher when the product is put up in attractive cartons. From twenty-five to fifty hives may be kept in a good-sized garden lot. A small family with such an apiary would doubtless have surplus product to sell to the neighbors. There are many instances where a cash income of from \$400 to \$500 is realized in this way; and in any garden city there are certain to be a number of enthusiasts loving bee culture and specializing in it, with a view of increasing their income. Such people will generally have their private customers in town and so obtain the full retail price.

In San Francisco some years ago there was a Boys' Bee Club, organized and directed by Ralph R. Bent, an enthusiastic young bee man, who attracted a following of all sorts and conditions, ranging from 8 to 25 years of age. They had their apiary at Sausalito, across the bay from San Francisco, where they all had a chance to take practical lessons in bee culture. Many of them turned out to be shrewd salesmen; among them a number of newsboys who made more money selling honey than they did selling papers. They canvassed the city for customers and found them readily on every hand.

It would be practicable to have such clubs elsewhere, especially among the young people of the garden-city homes, who would thus find profitable occupation for their spare time, and incidentally get some good lessons in salesmanship. In this way the surplus product from a number of small garden-home apiaries could be distributed without dealing with middlemen.

A densely-peopled garden city is not, however, the place for apiaries aiming at commercial production; at least, beyond such a small surplus as may be incidental to home production. For one thing, it is quite possible to have more bees than can subsist in a given neighborhood; for another thing, it is possible to have bees so numerous and active as to make it uncomfortable for the human inhabitants. Commercial apiaries should be located in a more open country, and in localities particularly favorable to bee food, both in the matter of cultivated plants and trees and of wild growth. In the West, sage, manzanita and eucalyptus are very productive, as are also the wide fields of al-

falfa. In the East basswood is important, while buckwheat and white clover are especially appreciated. One authority warns us that, where possible, bees should be located in low lands, so that in their search for sweets they may be empty when flying upward and have the benefit of the down-grade when they come home heavily laden.

Frankly, it must be said that there are many people who do not like bees—who feel about them very much as most people feel about mice—and live in constant fear of being stung when they are about. This, in spite of the fact that the true bee lover permits his adored insects to crawl all over him; putting them in his hat, and sometimes even in his mouth. Such persons insist that when folks are stung it is their own fault rather than that of the bees; that if they had the proper amount of confidence, and the very best manners, they would have no trouble of that sort. One of them naïvely adds: "If the matter came into court, they could never prove whose bee it was, anyway."

The Bureau of Entomology, Department of Agriculture, at Washington, D. C., supplies full information on bee culture to all. Just here it is desired to emphasize the fact that honey is exceedingly good to eat and can be largely made to take the place of sugar in the average household. The honeybee goes logically with the home-in-a-garden, and contributes much to its luxurious table. It adds to the variety of interesting occupations enjoyed by the household that is seeking contentment and happiness under its own roof, within the snug security of its own garden walls.

CHAPTER XVI

THE ELUSIVE MUSHROOM

THE mushroom belongs undeniably to the luxurious table, and is mentioned here for the sake of making that table complete; though it must be frankly said that of all the possible products of the garden home, the mushroom is the most elusive, and the least essential. It *can* be raised, but probably will *not* be to any great extent; though every garden city is likely to contain a few enthusiasts who will gayly squander time and money in its culture. Some of them will succeed, and now and then there will be a man who will realize a fabulous income from his mushroom bed considering the very small space it occupies.

It has been my good fortune to know some of the most successful growers in the United States, nearly all of them of French origin—one of them the third generation of famous Parisian growers of this delicacy. All of these men pretend to think it the simplest thing in the world to bring forth prolific crops in their caves and cellars. Often they have instructed others in the art, but I have never been able to learn that they created many competitors in consequence.

I heard of one man who diligently read all the books, took all the instruction he could obtain, equipped the finest sort of a plant, proceeded according to all known

rules—and did not sprout a mushroom! Finally, he pitched the rich but recalcitrant soil out of his cellar and into his barnyard, to the accompaniment of remarks unfit for publication. What was his surprise to go out a few days later and behold his barnyard white with mushrooms! "Verily," he said, "the art of growing mushrooms passeth all understanding."

I recall a golden day in the San Francisco Bay region when, with an inquisitive friend, I toured a district where the mushroom is the object of quite general attention. We found instances of varying success. Just at the close of the day we came to a beautiful home, occupying a half-acre of ground, with three mushroom cellars at the rear of the lot. It was an inspiring sight that awaited us. The mushrooms fairly bubbled from the smooth, rounded beds, which covered the floors of the cellars, and the proud proprietor was in the act of making his second picking of the day. He admitted that he was in the enjoyment of a handsome income, and that he had found one of the most delightful occupations in the world.

It looked very simple and easy. Apparently there was nothing about the construction of the houses that might not be readily duplicated. There were three of these houses, each 24x60 feet, and costing \$600 each. The side walls were of concrete, and there were two roofs, the under one of board, and the top of lath allowing for the passage of air between. When we congratulated him on having found the primrose path to prosperity, he smiled grimly and said: "Yes, but for six long, weary years I was a failure in this business. I used all the money I had and all I could borrow,

and if I hadn't come through at last I should have been ruined. It looks easy now—and it is—but I suppose there are not many who would have succeeded at the cost of the struggle I have been through."

After explaining all the details of the business, he took us to a shed that served as his laboratory, where he had bottles filled with mushroom cultures. He then opened a cupboard and displayed a most interesting array of little bricks. "I will tell you gentlemen where the secret lies. It is all in the spawn," he said. This coincided with what we had heard from those who had used various kinds of spawn, some of it widely advertised as a sure thing, and much of it disappointing in results. Our host informed us that he made his own spawn, and when we examined it we could see a striking difference between this and the kind usually on sale. It was fairly alive. It required but the slightest imagination to feel the pulse-beat of life in these little bricks of smoky blue.

We asked how he did it, and he smiled, but shook his head. "That is my secret," he said. "It has taken me a long time to perfect my methods. Out of the first lot of 228 bricks I made, only two were good. Now, I get nearly 100 per cent of live bricks." When we inquired if he would sell them, he returned an emphatic negative, saying he could make more money by raising the mushrooms.

Leon Rouge, of Los Angeles, is one of the famous growers of Southern California. He was educated in the mushroom cellars of Paris and is one of the men who dispelled the superstition that mushrooms can not be made to flourish in the dry atmosphere of Cali-

fornia. For several years he conducted the work in the cellar of his home, supplying the best hotels and clubs of Los Angeles at a uniform rate of \$1 a pound. As the locality became more thickly settled there were some objections on the part of the neighbors to the existence of a flourishing mushroom plant in the midst of their homes. Although Mr. Rouge had incurred considerable expense in the preparation of his plant (one of the most perfect exhibits of its kind I have ever seen), he cheerfully changed the location of his industry. Where do you suppose he went? To a long tunnel—a deserted city water main in Elysian Park. Here he began his work anew, and at first in an experimental way. It turned out to be successful. He obtained a big crop of mushrooms which sold readily at high prices.

There are many other interesting experiences that might be quoted, but they all come to the same thing. Mushroom culture is a highly technical undertaking. It requires not only skill and experience but much patience and some little capital. A good mushroom cave of commercial proportions costs anywhere from \$500 to \$2,000. A successful grower is handsomely rewarded, for there is an eager, unsatisfied market for mushrooms almost everywhere, and the cultivated varieties usually sell at a high price. It is possible to raise them in a small way for home consumption without much expense, and we shall see something of methods advised by scientific growers, when we come to deal with the mechanics of the garden home; but the probability is that most of our home gardeners will depend on the wild crop that is abundant in many parts

of the country—(it is to be hoped they will be able to distinguish the true from the false), patronize some of the successful growers likely to be found in each garden city, or get along without this luxury, which may be classified among the non-essentials.

When I mentioned the subject to Luther Burbank, he threw up his hands and remarked: "Please don't mention mushrooms to me! In my younger days I was very fond of them, and ate so many that I entirely lost my taste for them. I will say, however, that of all the things in the vegetable kingdom the mushroom is the most finicky. I never thought it of sufficient importance in an economic way to justify me in wasting any time on it."

Nevertheless, mushrooms are good when properly cooked, and certainly add to the luxury of the family table. As has already been said, they can be raised; but there is no apparent prospect of overproduction.

CHAPTER XVII

THE LUXURIOUS TABLE IN REVIEW

HERE, then, are the materials of the luxurious table that is to be brought within the reach of the home-in-a-garden folk, and to be generously spread for them and theirs throughout all the days of the future, whether prices be high or low, whether times be good or bad—in sunshine and in storm!

A comfortable sufficiency of all the vegetables that grow in the Temperate Zone—an infinite variety. Enough of these not only for consumption during the growing season, but for canning to supply the winter needs of the household.

A comfortable sufficiency of all the berries and small fruits that grow in the Temperate Zone—the products of garden bed and shrub and vine; and enough for jams, jellies and preserves throughout the year.

A comfortable sufficiency of all the tree fruits that grow in the Temperate Zone, with a surplus for preserves.

A comfortable sufficiency of eggs fresh from the nest. I repeat it—*fresh!*

A comfortable sufficiency of the very nicest milk; with delicious home-made butter, and a variety of delectable cheeses.

A comfortable sufficiency of chicken—age authenticated (not cold-storage).

A comfortable sufficiency of young, fat squabs and other fowl—ducks, geese, turkeys assuredly—even pheasants, if you've a taste for one of the more delicate tasks of poultry raising. The guinea hen is a triumph on the table, but something of a bolshevist in the garden—(her shrill, monotonous piping).

A comfortable sufficiency of rabbit meat, in all respects equal—in some respects superior—to chicken, with a by-product of fur which, if it does not belong to the luxurious table, is an added luxury for the family.

In addition to all this the occasional kid roast; even pork, if you have a pig, the sanitary pen, and—the gumption!

All these elements of a generous living are within the reach of the home-in-a-garden folk—not only within their reach, but subject to their *secure control*, regardless of railroad rates, middlemen's charges, strikes, lockouts, and fluctuations in the purchasing power of the dollar. They are available, too, at cost, which means, as we have seen, a cent a quart for a superior quality of milk; two cents a pound for the kind of sugar that comes direct from the flowers; vegetables and fruit at the cost of seeds, nursery stock and fertilizer; meat at the cost of such feed as must be purchased (at wholesale in the case of an organized community) to supplement the green stuff from the garden. All this because the garden people have resumed their heritage in the soil, the sunshine and the rain—God's beneficent provision for the physical sustenance of His children on this good earth. I reckon neither the land nor the labor into the cost. The land is part of the garden home, costing no more, and possibly less than that paid for a "canned" home in city apartments—

that sort of a home that appropriately accompanies a diet of canned vegetables, fruit, milk and meat. The labor is the loving, enthusiastic and interesting labor of the whole family in spare hours, with its grateful expression of individual initiative, and its valuable lessons in efficiency and self-reliance. These things represent long steps toward genuine freedom.

Stress is laid on a "comfortable sufficiency." It is of the essence of the new way of life. I am not talking of your old-fashioned farm, any more than I am talking of your cell in the apartment house. I am talking of the home-in-a-garden brought to its best efficiency and highest refinement. I am talking of a new type of man, a new element of our citizenship. We need a new term to describe him—this "country-minded" man loving the city and attached to its payroll, yet yearning for the rural savor in his daily life, and the opportunity of individual expression in healthful labor as much as "David Grayson"; as much as the New York business man we read of in earlier pages. What shall we call him?

The Homelander!

The man with a little home of his own on the land, where he may work lovingly for himself without a wage, yet for a higher compensation than he gets in town; and where, in the course of the patient years, he may rear a holy temple for his wife and babies, from which no landlord may turn him out.

That is the Homelander!

Every feature of his life has been demonstrated, and is now in successful operation. True, not all of it has been demonstrated in one garden city exclusively dedicated to the cause; still less in a thousand garden

cities throughout the land, with millions of garden homes. That is something that waits upon the future. But every separate wheel and cog that is to enter into the complete mechanism of the garden city has been tested and found to be good. And there are communities now in a state of thriving existence where the whole plan is approximated.

I am thinking of it now as a great department of our national life, under national leadership, as we shall presently see on reaching the constructive programme. I do not conceive it, except incidentally, in terms of our vexed "housing problem." Housing! A cold, repellent word. No, no! Not "housing," but making our earth to blossom with homes of men! And a *home* is much more than a *house*.

There will, of course, be unbelievers. There have been in every age. They oppose each step of human progress. They were born with the word "impossible" on their lips. And their forgotten dust paves the highways of history whereon the race has marched to better things.

They will call it a "dream"—this hope of a better, fuller, freer life for the mass of our country-minded. We answer: "But dreams come true!" They will characterize it by the moss-covered term—"Visionary!" We quote the Good Book: "Where there is no vision, the people perish." They are perishing now—of apartment houses, high cost of living, monotonous industrial ruts, stifled individualism, an overdose of the movies. They are lost in the jungle of our complex modern life.

The Home-In-A-Garden is the WAY OUT.

CHAPTER XVIII

SOCIAL LIFE OF THE GARDEN CITY

"A small house,
A large garden,
A few dear friends,
And many books."

THE ideal condition for an interesting and wholesome society, it seems to me, is a community where there are enough neighbors, but not too many; where neighbors are near enough, but not too near; where an approximate equality of fortune exists, so that there are no wide gulfs to be bridged; where the people, though diversified in race, religion and commercial pursuits, are, nevertheless, united by a common interest and enthusiasm, lending a certain fervor to their lives. If these are sound principles, then the garden city offers ideal soil for their planting and cultivation, and invites us to the consideration of forms of social life which hold out the most charming possibilities.

As to this, there is really no question, for if any side of the garden-city experience has been thoroughly tried out and demonstrated it is the social side. It offers a striking contrast to lonely country life on the one hand, and crowded city life on the other, striking a happy medium in which the advantages of both are nicely blended and their drawbacks largely avoided.

The drawback about average rural conditions in respect to organized social life is the lack of necessary facilities, and the difficulty of assembling the people without great inconvenience. The city, of course, has all the facilities for the most diversified social and intellectual experience within easy reach of its population, but in this case there are other conditions that make it difficult to obtain the best atmosphere and realize the best results. It is an axiom that in the city you scarcely know your next-door neighbor. Naturally, you have your own circle of acquaintances, your own social, religious, and intellectual affiliations, and so enjoy the benefits of society to some extent; but comparatively few people own their own homes, while the population is constantly shifting. They are more or less like the tumble-weed which, because its roots fail to strike into the ground, goes rolling about the country before every stiff breeze. So the shifting winds of employment and unemployment, of prosperity and depression, have their effect upon neighborhoods composed almost wholly of those living in rented houses or apartments. These conditions do not favor a high development of social relationships, and the consequence is that beyond a small circle of intimates very many of us have no social diversions except church and the movies.

The population of the garden city, on the other hand, will be composed 100 per cent of home-owners. There will be comparatively little shifting of population as the years go by. The home-in-a-garden folk are not like the tumble-weed; they are more like the oak that sends its roots deep, taking firm hold upon the soil, in

order that its sheltering branches may reach high and wide. Furthermore, in a garden city of the right size, people would be generally acquainted, and drawn together on many occasions by a common interest. These fundamental conditions are most favorable to the gradual evolution of an interesting society.

I think in time quite half of the population of urban centers will be dispersed in garden homes surrounding the city, within thirty to sixty-minutes' ride of their places of employment, and of the theaters, art galleries, department stores, and other great attractions which they will frequently patronize. This would mean that tens of thousands, and in many cases, hundreds of thousands of families would be so situated. We do not, however, wish to create another great city on the exterior of one now in existence, since that would nullify the social principles we are trying to establish. There should be a series of communities, often closely contiguous, but each with its separate social life, and the facilities that would be required for its service. A community of 500 families, representing a total population of from 1,500 to 2,000, would be about right to secure the best results in a social way. In such a community, in addition to their own personal friends and acquaintances, the people would enjoy the benefits of a highly-organized social life, such as is by no means now enjoyed by the vast majority of our people, either in town or country.

The throbbing heart of the organized social life in a garden city is its civic center, with its manifold activities. It is possible to make this institution a great social shrine—the common hearthstone of the

community. It is desirable, though not strictly necessary, that it should be very attractive in a material way, and very complete in all its facilities. I have had something to do with such institutions over a long period of years; and, testifying from experience, can bear witness to the fact that it is possible to achieve the finest spiritual results in the humblest environment. Never have I seen the spiritual flame of the community rise higher than in a little civic center which consisted of a shanty and a tent, and which became, in fact, the starting point of a new social history; but that was a matter of necessity rather than of choice. It is desirable that this great spirit should be comfortably, even handsomely, housed, and this will be readily possible in communities thoughtfully planned in advance, in the light of experience.

There is need, first of all, of a good-sized auditorium, capable of seating at least one-third of the community, which is as large a proportion as would attend on all except the most important occasions. There is much use for smaller halls, and it is convenient and practicable to have these built at the side of the large auditorium, and so arranged that they can be opened into it when it may be necessary to accommodate an unusual audience. One of the most cherished institutions in the garden city, as in all communities, is the public library and reading-room, and this should be an integral part of the civic center. Nearly all facilities of the modern club should be provided, since club life, both for men and women, is one of the most interesting and satisfying features in the daily experiences of the cultured and well-to-do.

The civic center can not successfully base its appeal upon any narrow range of activities. These should be diversified as much as possible, in order to enlist all of the interests and keep them alive. In one community of this kind I engaged an expert census enumerator who happened to be one of the settlers, and had him make a very thorough canvass to ascertain the tastes and talents of our people. He did the job quite scientifically, with card-indexed results. We were all amazed to find the amount and diversity of talent available for public entertainment and instruction. One man was an Esperanto crank, and it was not long before he had a number of people studying the universal language. One lady had made a deep study of old Colonial dances and costumes, and she soon had a wonderful class, which appealed especially to the older people. This revival of the stately minuet and other dignified dances of our forefathers was so popular that people frequently came many miles to witness it. It was marvelous to behold the grace concealed under the roughest exterior, and developed under this lady's enthusiastic teaching.

The census revealed one band-master, and a dozen or more young men who had aspired all their lives to blow a horn, with no opportunity to satisfy their ambition. It must be confessed that the community suffered a good deal while they were learning, but they finally emerged a fairly competent brass band. Some very good actors were uncovered (there are always such in these communities), and a rather unusual quality of dramatic entertainments evolved after a time. Of elocutionists, musicians, singers and good public

speakers there were many, for a surprisingly large proportion of the community were graduates of leading American and European universities, while fully half of them enjoyed something more than a common-school education. One of the most spiritual and eloquent preachers I ever listened to had been hiding his light under a bushel, and was induced to take the platform. He soon drew large audiences from the surrounding country, and a few months later was induced to leave us and accept a pulpit in a large city.

It is, perhaps, only right to note the fact that some harmless cranks were revealed by the census, and that a good deal of tact was required to keep them from monopolizing the limelight. Doubtless the most popular entertainments are the dance and the movies. Both require some restraint; or, let us say, intelligent direction. It is possible to have the best instead of the worst of these things, since the matter lies within control of a small and homogeneous public, so organized as to be able to give effective expression to its desires.

There is one feature of the social and intellectual life of a garden city that is capable of very high development. This is the weekly meeting devoted to Current Events. Many times I have said on such occasions: "We ought to be the most enlightened people on the face of the earth, with higher average knowledge of worth-while things transpiring throughout the world, than any other community." The passing of the years has not changed my view; I do not think the statement exaggerated. To begin with, the initial appeal of the garden city, as shown by experience and careful analysis of its constituents, is to an element



THE COMMON HEARTHSTONE
Great fireplace in a California clubhouse, inscribed: "To the Spiritual life of the Soil"



possessing a high average intelligence and education, even culture. The appeal is to the ambitious, the thoughtful—to those who aspire to better conditions of living for themselves and their children, and are willing to make some sacrifice to that end; hence, the human material is good to start with. Next, it is possible for the people conveniently to assemble once a week in a comfortable auditorium. Finally, in the citizenship of the nearby metropolis, and usually of the garden city itself, there is abundant talent to be drawn upon for the intelligent presentation of every topic within the range of current discussion—political, literary, artistic, scientific, and religious.

As I am writing these words, Einstein, the German physicist and Zionist leader, is in New York and on the front pages of the newspapers. I do not grasp his theory as to relativity, and am comforted to learn that there are only twelve people in the world who can do so; yet, if I lived in a garden city, and saw the announcement that some notable man or woman would occupy the platform to-night and tell us all the average brain can comprehend in regard to Einstein, including his passion for Zionism, and that this talk would be illustrated by moving pictures, I should certainly want to attend that meeting. At least, I should have the opportunity, along with all my neighbors, to get the best word about Einstein at the moment when he was conspicuously in the public mind. And, if I were in charge of affairs, I would undertake to get hold of Einstein himself and exhibit him as a passing lion.

This is only an illustration of the opportunities that constantly occur to lift the standard of general

information and intelligence, in regard to big things that are happening all of the time. The same thing may be done in a big city, of course, and is done in extraordinary cases. But in a garden city the matter is reduced to a science. We make a business of it, deliberately setting out on a voyage of intellectual discovery, and making it a matter of common pride to keep abreast of the world's progress. We have the spirit and the facilities to do it, and—*we do it!* Speaking again from experience, I can testify that it is a great privilege, appreciated by everybody, including some to whom it would not be expected to appeal.

I have a very clear recollection of the first evening of this kind I ever experienced—perhaps the first occasion when such a programme was carried out in such a community. It was inaugurated by a young woman of brilliant intellectual attainments, a graduate of Vassar, who had had the benefit of post-graduate courses at Columbia and at Stanford; and, though the affair was held in a tent, it is no exaggeration to say that it would not have proven disappointing if held at Carnegie Hall, New York. It covered every worth-while topic of contemporaneous interest, presenting not only the essential facts, but philosophic deductions that enlarged the outlook of all hearers. For example, Bleriot had just made the first flight across the English Channel, and, upon the strength of what now seems a trivial achievement, we soared through the skies of the future on the airplane—a future now fully realized and become commonplace. Indeed, under that extremely intelligent leading we enjoyed a luminous vision of the new intellectual universe

which was to be opened to the eyes of the common mind. We adopted almost as a watchword, the expression: "The world is only as wide as our thought—give us the wide horizon!"

It may be said that many people do not care for opportunities of entertainment and education, but prefer to spend their time at home, or in the company of their particular friends; hence, that these institutions of community life would languish.

That would be true, if the founders assumed that all people have the same tastes, and, therefore, that all would wish to attend the same function at the same time. Accommodations based on that theory would very often exhibit a discouraging amount of empty space. The most popular affair would rarely attract more than ten to twenty per cent of the community. Social tastes are widely diversified, and fortunately so. People form themselves into groups by natural attraction and common interests. The fellows who want to play chess or billiards, or cards, are not long in finding each other out and cementing firm ties of fellowship. It is so with the literary, musical, scientific and religious groups. Then there are studious individuals who haunt the library and reading-room, and a certain percentage of "clubable" folk who like to sit around the fireplace and swap yarns. These matters all readily adjust themselves.

There is such a thing as the social instinct; and the properly organized garden city offers the fundamental conditions best suited to its successful cultivation.

In writing of these hopes to Secretary Lane, with special reference to the civic center in a garden city

for Washington, I said: "One thing I have set my heart on, and that is chimes! I want the Homelander to stand on his porch at twilight, and hear 'Abide With Me' ring out over the land and echo back from the hills; for I am thinking of the Spiritual Man of the Soil who is working in conscious partnership with God in going on with the creation of the earth—the new and better earth that is to be." He replied in warm sympathy and approval in regard to the whole plan, and said with italicized emphasis: "*I am for the chimes!*"



CHAPTER XIX

THE PERSONAL EQUATION

The lowliest hearthstone flame
Is worthier of worship than the sun.
The patter of bare brown feet that dance and run
Over roughest cabin floor,
And the poor mother's happy smile, are more
Than starry hosts and lofty ghosts,
And awful phantoms born of overwrought
And soulless travail on the heights of thought.

Maurice Thompson.

THE way of life discussed in these pages will bring happiness and contentment, together with a large measure of security and individual independence, founded on landed proprietorship, to millions of families now utterly defenseless against the high cost of living and entirely dependent upon landlords for a place to lay their heads. A movement that promises so much in the way of social upbuilding is certainly well worthy of national attention and encouragement. It does not follow that everybody will adopt this way of life; or that all would find it satisfactory if they did. It has been my consistent effort to keep clear the distinction between those who are city-minded and those who are country-minded. It would be very interesting to know how society is divided along these lines, but there is no way to ascertain, except by the slow evolution of the national life.

The city-minded will continue, as they ought, to dwell in town. Capital and enterprise, catering always to popular taste, have brought wonderful improvements in the conditions of urban living and will doubtless continue to do so. The modern apartment house is a monument to the craze for city life. It brings within reach of the many conveniences that could not be bought with a price a generation or so ago. Municipal advantages of every kind have been highly developed and are improving all the time. For the city-minded, capital and genius have wrought well in every department; and yet, from the standpoint of the country-minded, the sum of this fine achievement is as "dust and ashes," because it leaves their souls utterly unsatisfied. It represents only the dry husk of living. There is no nourishing kernel at the core of it.

The country-minded will never be happy until they can set their feet on a spot of ground all their own. Like the birds of the air, they want a nest of their own designing and fashioning, in the shelter of the trees, under God's blue sky. They simply can not make a *home* in an apartment house, be it ever so aristocratic and expensive, and equipped with every convenience that the human brain can devise. These country-minded people will always be spiritual aliens in a flat. They will never be at peace with themselves until they strike their roots into their native soil. Having done everything for our city-minded, the time has come when the craving of the country-minded should be allayed, if for no better reason than that of quieting social unrest, and thereby conserving our institutions. The city-minded should stay in town, and doubtless

will. No poorer service could be rendered than to urge them to do otherwise. They are happy in their present environment and would be miserable if they stepped out of it.

Hence, this message is designed wholly for the country-minded who desire to satisfy their passion for the soil without sacrificing any of the good things they are now getting in their urban experience, including their hold upon the payroll.

When we shall have put a tithe of the money and genius into the creation of garden cities that we have put into apartment houses, family hotels, and separate houses jammed together on 25-foot lots, there will be a revelation of country-mindedness that will arouse the nation to a sense of duty long neglected, and put a new star of hope in the sky of our common humanity.

The personal equation is what tells in making success or failure, contentment or discontentment, in the home-in-a-garden, as in other walks of life. Those who have the right feeling and the aptitude—or at least the capacity to acquire it—are the ones to enter upon the adventure. There is such a thing as the home-in-a-garden kink in the brain, just as there is such a thing as the mechanical kink in the brain; and, in fact, the two are akin, since the element of workmanship enters into both. Decidedly there is a technical side to little-landing, and boundless scope for the growth of proficiency, acquired in part by study, but more by experience. The people who do well are those who care; and the people who do best of all are those who sense the deep spiritual significance of the thing, and so make it a sort of religion. In many this is a dormant sense

susceptible of being awakened and cultivated in a high degree, like the sense of democracy in backward peoples.

The country-minded are confined to no particular walk in life. To illustrate, in one garden city, where some one took pains to get the data, it was found that the following occupations were represented: Housewives, farmers, carpenters, physicians, stenographers, nurserymen, builders, editors, grocers, craftworkers, stationary engineers, school-teachers, dressmakers, clerks, expert accountants, photographers, contractors, real estate men, printers, clergymen, horticulturists, electricians, metal workers, bank clerks, mining engineers, artists, assayers, bookkeepers, jewelers, blacksmiths, music-teachers, authors, storekeepers, car-builders, railroad conductors, civil service men, machinists, hotel steward, lumber dealer, truckman, newspaper manager, superintendent of water-works, landscape gardener, locomotive engineer, construction foreman, produce dealer, rancher, gardener, dry goods, tinner, cooper, wood patternmaker, laborer, restaurant man, worsted weaver, patent medicine.

As the appeal of the garden home is by no means limited to any particular walk in life, neither is it limited to either sex. The garden home is preëminently a family rooftree, and its ideal proprietor is the man with wife and children, all interested and helpful. I venture to predict that the divorce rate will decrease with the growth of garden homes. Such homes are far more favorable to domestic felicity than apartment houses and family hotels. The mere fact of partnership in a mutual enterprise will have something to do



LIVING USEFULLY AT 81

Many a man who, in the days of his strength, has provided himself with a well-equipped Garden Home, will find the answer to the poet's prayer:
"May my last days be my best."



with it; absorption in interesting work will have its part; but more than all else, the spiritual companionship that goes with the trees and flowers and open skies. Not only will there be fewer divorces; there will be more marriages and more children, and for similar reasons.

The occupations of the garden home are all such as women can readily pursue, if they have the taste for such things. An interesting and inspiring book might be written on this phase of the subject. Nothing except the limitation of space restrains me from relating many experiences of the kind which have come under my own observation during the past 20 years. Even so, I must refer to a single instance that may inspire others to the adventure.

In one of the most picturesque of California valleys, not far from Los Angeles, two young women started out ten years ago to make a self-sustaining home on a single acre. They were accomplished artists, and perhaps the wild beauty of the region lured them into this new way of life, so strange to their experience and—some would have thought—so forbidding to persons of their delicate strength. They built a commodious and beautiful tile house, largely with their own hands, and proceeded to organize their small holding on the basis of the most diversified production—vegetables, fruit trees, berries, poultry, rabbits, bees, and, finally, goats. "Pretty hard work for two girls," they always cautioned me to say, yet there they are after many years, and there their hearts will always abide.

They demonstrated that they could make a living from an acre of ground within easy distance of a great

city, and enjoy a life of glorious freedom in an environment exceedingly inspiring to their artistic tastes and talents. One of them, Miss Mabel Free, was the gardener; while the other, Miss Emma Kraft, looked after the live stock, finally specializing on Nubian goats (fell in love with their Roman noses!) and won high distinction as a breeder. It was a thoroughly triumphant experience.

Such experiences pertain to all parts of the United States and to many different lines of work. Everybody knows, of course, that women are often adepts at raising flowers, and there are numerous instances where they have developed into skilled florists and enjoyed a high degree of commercial success. Women are equally successful with vegetables and small fruits, and are particularly adapted to the fine art of intensive cultivation.

The culture of thoroughbred goats has fallen very largely into the hands of women—perhaps because of their sympathy for children, for whom this kind of milk is often prescribed.

The raising of chickens and squabs are favorite industries of women, and income from this source frequently supports a family in moderate circumstances.

Women also take kindly to rabbitcraft, and when they raise the fur-bearing varieties, often do well in manufacturing and selling fur garments. Often they specialize with bees.

Among the country-minded people of big cities are great numbers of unmarried women who do well in garden homes of their own, especially where there are two or three of them to coöperate in the undertaking. Indeed, these bachelor-maids, as well as bachelors of the male persuasion, have always been conspicuously

numerous in garden communities. Sometimes when I see a childless woman hugging a fashionable poodle and am told that she does this in response to the maternal instinct, I am moved to wonder whether she does not represent a type of women who would find far more satisfaction if they lavished their affection and energies on the interesting small livestock that goes with a garden home. Really there is a principle here worth thinking of in relation to both sexes; and it is a possible explanation of the undoubted fact that unmarried men and women do naturally tend toward the little home on the land. Of course, they do not all remain unmarried. Who would expect them to do so, since the advantage of a woman in the home and a man on the place, becomes quickly obvious? The agreeable social contact in such a community is rather discouraging to single blessedness; and the really competent person of either sex is likely to develop into a great attraction. This is natural and logical, and by no means to be deplored.

There is another respect in which the personal equation should be emphasized—its relation to the problem of old age. A few years ago an Eastern publication projected this question: "Where will you be at 65?" Following it with this statement:

"Of 100 healthy men at 25—

36 will be dead at 65,

1 will be rich,

4 will be wealthy,

5 will be supporting themselves by work,

54 will be dependent upon their friends, relatives, or charity."

If this be true, then more than half of us have something very serious to think about. Nothing is more terrible than an unprovided old age. For many people, the garden home is the best possible provision, and when we shall have the right sort of national policy this provision for a decent, comfortable, and interesting old age will be brought within the reach of almost everybody. For many it will be the richest period of their lives. Of course, it is possible for a man to outlive his usefulness, even in a garden home; but the best place for him to be when that time comes is in a neighborhood of sympathetic people, and the best asset to possess is a well-developed garden home, where he may readily find companions, or a family that is willing to occupy the place—(purchase it, perhaps), in return for the care of its feeble owner. That is better than dependence on “friends, relatives, or charity.” Indeed it is not dependence in any proper sense. It is paying for what you get in the kind of coin that is worth its face.

The care of such a place is not beyond the strength of healthy old age. With no rent to pay, with plenty of vegetables, berries, fruit, milk, eggs, and considerable meat, the cost of living is small. It is quite feasible to have a little surplus to exchange for cash, especially of such things as eggs, chickens and rabbits. The average old man would be far happier and better off in every way in such a home of his own than in a public institution, even of the better sort. In considering the personal equation, the ageing person may well ask himself if he knows of any better provision to make in the



SERVING HER COUNTRY AT OVER 90

Mrs. Thomas B. Edwards of Oberlin, Ohio, cultivated her war garden after the initial plowing, besides canning vegetables for herself and relatives

days of health and strength than to invest his savings in a garden home, and acquire all the skill he can in handling it. This is a question for millions of men and women—a question by no means academic, but of the most practical sort.

Another aspect of the personal equation: S. W. Strauss, of the National Society of Thrift, quoting from the records of the Surrogate Courts, made this statement:

“Of 100 men who die—

3 leave estates of \$10,000 or more,

15 leave estates of from \$2,000 to \$10,000,

82 out of every 100 leave no income-producing estate at all.

“Of 100 widows—

6 are left in good or comfortable circumstances,

47 are obliged to go to work,

35 are left in absolute want.”

What a reflection on the civilization of America in the Twentieth Century! Eighty-two men out of every hundred are unable to provide for their nearest and dearest, as the net result of their life-time labor! Their wives must go out and look for a job, or hold out their hands for charity when the bread-winner drops by the wayside.

Really, is it any wonder that among our hundred millions there are some who openly declare for Social Revolution? A great New York banker, on returning from a trip to Russia, remarked: “We would all be

Bolshevists if we were hungry enough." The world has learned, of course, that Bolshevism is a poor antidote for hunger; but who shall say that the well-developed garden home is not an antidote for the 54 per cent of old men and the 82 per cent of widows now left defenseless in their hour of greatest need?

If we could do nothing else with the home-in-a-garden policy except to right these social tragedies the thing would be worth while. It happens that this, important as it is, is only a beneficent incident of a system that will heal a thousand wounds, found millions of independent homes, deepen and broaden the basis of our institutions, and literally "take Occasion by the hand and make the bounds of freedom wider yet." Even so, could there be a sweeter service to humanity than to raise a shield for old age and widowhood against the dangers that now beset them, with the vast majority of our people?

Finally, a thoughtful consideration of the personal equation is the first thing the interested reader owes to himself. It can not be too often said, nor said with too much emphasis that the home-in-a-garden is for those who like that sort of thing; and especially for those who like it so much that they can enter upon it in the spirit of consecration. There is no holier place on earth than the home; no more sacred altar than the family hearthstone. Its possibilities of happiness, contentment and security are infinite. It has its material side, but its dominating note is spiritual. It is, perhaps, the deepest note we ever experience; as deep as man's love for the wife of his youth; as deep as his love for his children. To make one such home

in the course of a lifetime is an achievement to challenge the pride and strength of any man; to make millions of such homes would be the proudest achievement of statesmanship.

PART TWO
THE CONSTRUCTIVE PROGRAMME

CHAPTER I

THE AGE OF THE ENGINEER

THE world has come to the Age of the Engineer—when engineering is statesmanship and statesmanship is engineering. The demand is for *facts*, for *exact information*, and then for the application of the facts by genuinely scientific methods. The end sought is efficiency not merely, but something infinitely more important—the extension of man's promised dominion over the earth, with an unimagined increase in the security, the prosperity and the happiness of mankind.

Men can live—have lived for ages—by the crude, primitive, even wasteful use of Nature's resources; but infinitely more of them can live, and live infinitely better than men ever lived before, when they shall have learned to make the most of their opportunities and environment. This is the key to the future, which is to be better than the past. Only the high spirit of the trained engineer, dwelling in the upper air of disinterested service, is equal to the obligations of leadership in a day when this fundamental truth is realized.

These are facts which the world is just beginning to see; but they developed very early in the course of the inquiry set on foot by Secretary Lane in the interest of rural reconstruction. It was perfectly plain that all the great mistakes that had attended the develop-

ment of agriculture, nearly all of the disheartening disappointments, and a very large share of the unpopularity of rural life, could be traced to the absence of this high sense of engineering and of responsible public leadership that should make it available to the people.

We had permitted the spirit of individualism to run riot in a department of the national life closely related to the common welfare. There is no reason why an acre of poor land should ever be offered to a settler. There is no reason why vast areas of land, unfitted for cultivation in their natural state, should not be made over into the best soil, whether it requires drainage, irrigation, clearing or refertilization; but, to deal successfully with such things it is necessary to enlist a quality and range of information not within reach of the average promoter or settler, and then to utilize this information in a scientific way. The great need is a form of development thoroughly planned in advance, and executed with precision.

Another conclusion was arrived at: That it is not enough simply to investigate soils and do the large work of reclamation, such as the provision of irrigation and drainage, as the Government has done in the Western States. The land should be cleared, plowed, harrowed, and made ready for the planting of the seed—even fertilized if necessary. Some of these processes require scientific knowledge and methods; and all of them can be performed more economically and thoroughly if done on a large scale and standardized. After all this has been done, the settler stands only on the threshold of his new adventure. The engineer

should go with him all the way. Some one should plan his system of agriculture with due reference to soil and climate, transportation facilities and markets. He needs prevision in this respect; needs an architect for this work more than for the building of his house. He can live in any sort of a house, if need be, but can by no means succeed with any sort of a system of agriculture.

There is no reason in the world why each new settler should begin as though he were the first man who ever tried to make a home on the land; no reason why he should not proceed to his work in the light of all the experience of the past; but, to do this, he requires a range of information not easily within his reach, and, indeed, only within reach of the trained and scientific mind. Even when he has the correct system for his environment, he seldom knows how to apply it in a manner to obtain the best results. He must be instructed by text and by example. Telling him is not enough—he must be *shown*.

Next, comes the need of organized coöperation. First of all in buying, then in packing, shipping, sometimes in manufacturing, always in selling, which often includes the feature of publicity. It is a misnomer to speak of the independent home. Interdependent is the right word, for a prosperous community on the land is made up of many units, each more or less dependent on all the others, and requiring the element of unity in their affairs in order to realize anything approaching the best results. Here good engineering—using the term in its broadest sense—is highly essential. The lack of it is responsible for many tribulations. It is

pitable to see millions of farmers, long established on the land, groping their way to forms of coöperation which they have found utterly necessary to their economic existence, and which the right sort of engineering might readily have provided for them at the beginning, long before they got into trouble. In fact, it could have been done far better in the beginning than at the later stages, when a thousand obstacles have arisen, and a thousand evil ways have hardened into custom.

In a garden-city settlement, I would carry the spirit of engineering still further—even into the kitchen and dining-room. If our people are to live luxuriously, it is not enough for them to know how to produce all the materials for a luxurious living; they must also know how to put them together. Take so simple a matter as a salad: Anybody with a garden can grow nearly all the components of a good salad; but, there are salads and salads; some hardly fit to eat, others that are food for the gods. Making a good salad is an art.

I recall a wonderful dish I once had in a San Francisco restaurant. I sent for the chef and asked him if anybody could make that kind of a salad if he had the ingredients and knew how. "Sure!" he said, with an expansive smile. "Well," I replied, "if a lot of people who raise these things should send for you and pay you a good fee, would you show them how to do it?" "Sure I would!" he replied. Now, the man is a scientific engineer in the matter of making salads. Isn't it absurd that a lot of nice men and women, having the material at hand, and lacking only the art of making the most of it, should go on eating commonplace

things, when they might have the best, if they only knew how? *

The principle applies to everything produced and consumed in the garden home, but it will never be developed to its full possibilities until we have the engineer in the kitchen. It is possible to map out the family bill-of-fare long in advance, and to order production accordingly. It is possible to provide luxurious fare, daintily served, in the homes of all our people; but these things will not actually be done until the founders of communities enlarge their vision of responsibility and usefulness.

We must have the New Engineer to make the New Earth.

It is only fair to say that great progress has been made along these lines during the past few decades. The early eras of colonization, beginning with the Pilgrim Fathers, and coming down as late as the settlement of the Mississippi Valley, managed to get along with little or none of the spirit of engineering. In late years, both the Government and private enterprise have done much in the way of hydraulic and agricultural engineering, yet we are only at the gray dawn of things in this regard. We need a School of Social Engineering that should supply a far more comprehensive training than is now available in any existing institution. We still should be dependent on specialists in many lines of investigation and construction; but we need a type of engineer who will grasp the whole

* Shortly after these words were written the Boston Institute of Technology announced a new department of Food Engineering.

problem of organizing prosperity and happiness for our people on the land.

The man will come forth in response to humanity's great need. He will be the Architect of Institutions.

CHAPTER II

WHAT THE GOVERNMENT OWES ITS PEOPLE

The future works out great men's purposes;
The present is enough for common souls,
Who, never looking forward, are indeed
Mere clay, wherein the footprints of their age
Are petrified forever . . .

James Russell Lowell.

IT used to be said that Uncle Sam was rich enough to give us all a farm. That was true while the fertile lands of the Mississippi Valley were still a part of the public domain, and while the settler had simply to turn the prairie sod and proceed with the planting of his crop. Those days are long past. Uncle Sam is not now rich enough to give us all a farm. And it would not be a good thing for most of us if he were. The things we work and pay for are always more valuable to us than the things we get for nothing. But Uncle Sam does owe something to his people in the matter of homes—both garden and farm homes. It is something the people do not possess; something they can not buy with money.

This something is enlightened, disinterested leadership.

With a quality of leadership in which they shall have perfect confidence, the people can do everything for themselves that needs to be done. No private

agency can command the necessary confidence because in the past no private agency has ever been equal to the responsibility. Perhaps it is not in human nature that any private agency should be equal to it. There are drawbacks about the public service, chiefly the fact that it is wretchedly underpaid, but it has one great advantage—the fact that it enables a man to rise above all thought of selfish personal interest, save as his interest may be forwarded by noble service, and to view the problems before him in a spirit of complete detachment. This spirit of detachment is essential to the sort of home-building that will be the real healing and saving of our people. I repeat, it is not a question of public money; it involves no raid on the public treasury; no taxing of some people for the benefit of others; but it does involve a raid, if you please, upon the nation's reserves of intellect, of knowledge, and of heart.

This is one of the great lessons learned in consequence of Secretary Lane's inquiry in the interest of national reconstruction. Necessity is still the mother of Invention. It was found that with a fixed debt of twenty-four billion, an annual budget of four or five billion, and a currency inflation that cut the value of every dollar in half, it would not be possible to obtain from Congress—even if anybody had the courage to ask it—anything approaching the amount of money that would be required to develop a home-building policy worthy of America. A big appropriation might be had in the interest of our service men. That was a matter that stood on different ground. But Peace has her dead and wounded as much as War. As a mat-

ter of fact the veterans of peace, because of age and other disabilities, are often in more urgent need of homes and employment than that large proportion of War's young veterans who came unscathed from the battlefields, or perhaps never had the good fortune to come within sound of the enemy's guns.

In searching for a key that might unlock the door to the land in the interest of all elements of our people, some eyes were turned toward Utah, which has enjoyed an uncommonly successful colonization experience since July 24, 1847, when Brigham Young and his little band of hunted fugitives emerged from the mouth of Emigration Canyon and entered upon the founding of a great State, whose cornerstone was the little irrigated farm. Here, for three-fourths of a century, poor men have been coming from all parts of the earth to find jobs working for themselves and build self-sustaining homes, to become landed proprietors, to share in the coöperative ownership of the store, the factory and the bank. Nowhere else is ownership so widely distributed among the people, or the common prosperity erected on so firm a foundation.

The achievement can not justly be credited to capital. There was no capital to speak of in the early days when the foundations of the Commonwealth were being laid deep in the arid soil. Labor can claim no peculiar credit for the achievement, because men have labored everywhere and always, and have no expectation of ever doing otherwise. "Thou shalt earn thy bread in the sweat of thy face," is the Divine command. Utah is a monument to leadership—to a quality of leadership that has been creative and inspiring.

This leadership has been generally attributed to the Mormon Church, and justly so. It is often said: "Yes, the Church could do it, but nobody else could do it." It is a shallow remark, based on the most superficial knowledge of Mormon institutions. Leadership is leadership; and, great as is the Mormon Church, it is a very small thing when compared to the Government of the United States.

Many years ago I discussed this subject before a meeting of Boston ministers. One of them arose and asked, in a nasal voice: "Will you tell me how it happens that after half a century of vigorous prosecution on the part of the Government these Mormons are growing faster and prospering more than ever before?" I replied: "That is a very easy question. Your church, I assume, offers the prospective convert a halo in the next world. Now, the Mormons offer him three square meals a day in this world, with a halo in the next world thrown in for good measure. It is a proposition that has appealed to a good many people—especially among the landless, half-hungry people of Europe."

The fact is, whether it happens to be agreeable to you or not, Brigham Young was an empire builder—a captain of industry, an organizer of prosperity. His policies proved so satisfactory to all concerned, including the Treasurer of the Church, that they have been continued by all his successors down to the present hour. His emblem was an eagle with open beak and outstretched wings, standing on a beehive. "Fit emblem," said Joseph Cook; "rapacity preying upon industry!" Another shallow comment. Joseph Cook is

nearly forgotten. Brigham Young looms larger with the passing of the years. Whatever his errors—and the attempt to establish polygamy under the American Flag was an error, now admitted, officially reversed, and practically abandoned—250,000 happy and independent homes will plead for him in trumpet tones at the Throne of Grace.

For many years I have been saying that what this country needs is a Mormon Church—without Mormons. I mean a policy of the Federal Government that shall do for all our people in the future what the Mormon Church has been doing for its own people during the past 74 years. It has not financed its people, except temporarily, and in a very limited way. What it did was to create a system that would enable the humblest settler to proceed in the light of the highest available intelligence. This intelligence, in the early days, consisted of the shrewd common sense of the founder and the very able men by whom he was surrounded; many, like himself, drawn from the best strain of New England blood. In later years, this intelligence took on a scientific cast through numerous schools and universities.

Intelligent leadership was supplemented by a humane and statesmanlike policy of development. No settler was left to shift for himself, nor allowed to enter upon the adventure at anything less than the best place that could be found. No one was permitted to exploit him in the price of land—(for the most part they were able to obtain free public land), nor in the price of water for irrigation. In fact, Utah is one of

the few States where no one ever dreamed of trying to make merchandise of the melting snow and falling rain. Irrigation was a purely coöperative undertaking from the first, as much as the dikes of Holland. It was the first and most essential provision for the common welfare. Men shared the benefits and the burdens equitably. Out of this initial coöperation grew a whole fabric of coöperative industry.

The only valid claim I know against the system is that it required its beneficiaries, so far as the law could be enforced, to pay tithings, or ten per cent of their gross returns, to the Church. It always seemed to me that this was purely a personal matter between the payers and the payee, and that the loyalty of the vast proportion of the payers might fairly be accepted as the complete vindication of the payee. At any rate, this feature is only incidental to the system; it signifies nothing when we come to consider the application to the national life of this great and tried principle of leadership by the Government that represents us all.

Many measures providing for reclamation and settlement were introduced in the 65th and 66th Congresses—several of them in response to Secretary Lane's propaganda for Soldier Settlement. All of them frankly recognize the obligation of National leadership to the homeseeker; all of them go much further in extending national aid than any previous legislation; all of them contemplate not merely the reclamation of the land, but the preparation of the soil, its subdivision into community centers and outlying farms, construction of roads and other facilities of the com-

mon life, including community buildings, the organization of coöperative systems for the purchase of supplies, and the sale of products; and something in the way of social and civic organizations. Some of them provide advances of capital to assist settlers in making their improvements; and under all the bills it would be possible for the Government to supply supervising architects for private as well as public buildings.

These advanced ideas of social legislation are chiefly to be credited to Dr. Elwood Mead, an American engineer who learned his lessons from practical experience in Australia, and from European travel and observation; and who is now doing great work for the people along these lines in California. He was one of the first of the experts summoned to Washington by Secretary Lane.

With a single exception, all of these measures call for large public appropriations, ranging from \$250,000,000 to \$500,000,000; but none of them propose to give a dollar of this money as largess or subsidy. Every dollar would come back to the Treasury, under a plan of amortized payments, bearing four per cent interest and running over a long series of years.

The only constructive measure of this character that calls for no public appropriation whatever is known as the "Rural Homes Bill." It was introduced and championed by Utah's great Senator, Reed Smoot. Briefly, it makes available to land-owners, reclamation districts and homeseekers the expert ability and valuable experience of the United States Reclamation Service, on condition that all such projects shall be financed

by private capital, under contracts that furnish absolute protection to the Government. The supporters of this bill told the whole story when they said:

"Instead of asking Uncle Sam to carry us on his back, we only ask him to show us the way."

The Rural Homes Bill brought forth several interesting debates in the Senate, in the course of which its sponsor encountered a steady fire of searching questions from several of the most prominent members of that body. In the end, it passed the Senate without a dissenting vote. In the House, it went to the Committee on the Irrigation of Arid Lands, of which Hon. Moses P. Kinkaid, of Nebraska, is Chairman. It could not have fallen into better hands, although its broad national purpose might have justified its reference to any of several other committees. After full discussion the Committee reported it favorably, even enthusiastically, to the House, by unanimous action.

It came before that body for debate on December 21, 1920—the three-hundredth anniversary of the Landing of the Pilgrims—and friends of the measure had hoped it might pass on that day. While prevailing by a good majority on the test vote, which came on the adoption of the special rule permitting its consideration, it nevertheless encountered strenuous opposition—almost entirely from the South—and so went over as unfinished business. It was not possible to bring it up again before the expiration of the 66th Congress, owing to the crowded condition of the calendar. It was promptly reintroduced in the 67th Congress, by Senator Smoot.

The essence of the bill is National leadership in the building of homes for the American people—that qual-

ity of enlightened leadership detached from every thought of selfish personal interest, which we have seen to be essential to the best results. The moral, intellectual and scientific resources at the disposal of the Government would be mobilized in the service of the humblest home.

The law would be in no sense mandatory or restrictive. It does not mean that private enterprise shall not be permitted to engage in various forms of land development in the future as in the past. It means merely that those who prefer to submit their project to the Government, first for thorough examination of all its aspects, then for actual construction and organization, may have the opportunity to do so, upon condition that they shall provide every dollar of the funds required for the project—such funds to be deposited with the Treasurer of the United States, and paid out upon the vouchers of the Secretary of the Interior. In return for these advantages the owners of the project permit the Government to fix the price of the land, thus agreeing to accept a reasonable limitation upon the profits of the enterprise.

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B.M.)

The Government will also have opportunity to exercise wise discretion in the selection of settlers, and to establish rules and regulations that will tend to prevent speculation, and favor those seeking permanent homes in good faith. It is to be assumed that if the system justifies itself in practice, it will gradually become the favored method of land development, and prove to be equally in the interest of landowners, investors and homebuilders. The cornerstone of the system is public confidence of the kind that is rarely, if ever, enjoyed by purely private enterprise, and that

can only be supplied where the element of personal interest is displaced in favor of the element of disinterested and consecrated public service.

The first test of the new system will come on the side of financing. Will capital invest under such conditions? Capital craves security, and the best possible assurance of reasonable profit. When these two elements are present, the real capitalists—the mass of thrifty, forehanded people—neither ask nor expect exorbitant gains.

To the extent that the Government commands the confidence of the investing public, capital will undoubtedly respond to the invitation to invest, on the basis of a disinterested and scientific report, to be followed by a disinterested and scientific administration. The homebuilding public itself is able to finance its operations in large part. It possesses one singular advantage, as compared with any other public; that is what might be called "the citizenship asset," or the increment in value instantly added to land by the presence of permanent population, and the improvements that necessarily accompany it. This consideration enhances the security, both in amount and in character, and should powerfully assist the financing of such homebuilding projects.

The Liberty-Bond campaign demonstrated the tremendous potentiality of the public as investors. Next to the need of sustaining the country in the midst of war, perhaps nothing would appeal so powerfully to this great potential capitalist as a constructive policy that aims to cover America with independent homes.

CHAPTER III

THE ORGANIZATION OF THE GARDEN CITY

THE value of the public service described in the preceding chapter will become instantly obvious to the reader who visualizes a group of country-minded people dwelling in a large city, but yearning for the home-in-a-garden experience.

Who is to select the site for their garden homes? Who is to pass upon all the vital elements in the situation—soil, water supply, drainage, transportation facilities, price of land, and terms of payment? Who is to plan, construct and administer—at least in their earlier stages—the various public utilities required in a garden city that is intended to supply the highest conditions of modern life? Who is to organize the various activities of the community, social and commercial, during the formative period that always intervenes before the people have found themselves?

In a word, where shall leadership be found—the kind of leadership that will command the confidence of both capital and homeseekers?

Such leadership can not come from the real-estate fraternity, because they approach the problem from the wrong angle. The real-estate fraternity has, indeed, done a mighty work of national upbuilding in many parts of the country, and in recent years, it has tended to put more social spirit into its work. It has

been virtually our only reliance in widening the foundation of urban communities, and largely so in the extension of rural development. If its contribution to these results were suddenly subtracted from the sum of national greatness, it would leave many gaping holes. But it possesses this fatal weakness—that it is animated by selfish interest, aiming at private profit. It is, then, primarily the expression of the speculative instinct; and only secondarily the expression of the social spirit.

It is estimated that the present home shortage in the United States reaches the astounding figure of 2,000,000. The Senate Committee on Reconstruction, under the able and devoted leadership of Senator Calder of New York, estimates that \$5,000,000,000 is needed to build homes—a situation that calls for a higher leadership than the real-estate fraternity, with all its enterprise and constructive imagination, is able to furnish.

The policy embodied in Senator Smoot's "Rural Homes Bill" would substitute national for private leadership in this great field of effort, while still preserving individual initiative, and relying on private capital to furnish the sinews. The policy is expected to effect a very great saving in the cost of land, largely because it can readily eliminate most of the selling expense, which usually ranges from 20 to 40 per cent in the case of private real-estate operations. This is possible because the people so readily Follow the Flag, as has been shown over and over again in the opening of public lands. In a recent instance where the land was free, but water rights cost about a hundred dollars an acre, such an offering by the Government was over-subscribed nearly

two hundred times, and that when the trend away from the land was at its maximum. Great savings could also be made in the cost of material and construction because of wholesale operations and of the standardization that could be effected in building the houses and furnishing the various equipment for garden homes.

Is there any middle ground between outright private enterprise, on the one hand, and Government leadership on the other? The best answer to this question is the extraordinary experience of the National War Garden Commission sketched in a previous chapter. In that instance, the finest public spirit leaped to meet a great emergency, without waiting for one line of legislation, or asking a penny from the public treasury. It proved in the highest degree efficient, accomplishing monumental results; but—it ended with the passing of the emergency; it was a part of that spiritual exaltation that enabled the Nation to perform miracles in every department of its life.

It might not be impossible, though it certainly would be difficult, to evolve a similar spirit and organization to meet the needs of peace. In fact, there is a wide educational sphere for such a work—a sphere that must, and doubtless will, be occupied by forces even now in operation. These are the forces of public opinion. They need to be organized and widely extended, in order that the Nation may be aroused, inspired, instructed; but when it comes to leadership in the actual building of the Nation on the soil, why should not the Government itself assume the responsibility? It has all the facilities in its various departments, which could be readily coördinated into an effective whole. Above

all, it possesses the confidence of the people in a degree that no private organization, however enlightened and unselfish, can ever hope to attain.

I repeat: It is not *money*, but the *right sort of leadership* that the people have a right to expect from their Government. The country-minded masses in our cities can pay for garden homes about as readily as they can pay rent on city apartments, if they can only be shown the way. It would be not only kindly and humane, but absolutely constitutional, for the Government to "promote the general welfare" by this means.

The scientific organization of a garden city involves not merely the selection, purchase and improvement of the site, including public facilities and private dwellings, but the setting up of advanced forms of social and economic life. These things take care of themselves after a while, but not at the beginning. Take the matter of coöperation in buying and selling: The argument for the system is unanswerable. It is preposterous to have a number of little competing stores, duplicating all the processes and all the expense involved in distribution, when one fine central department store, coöperatively owned and managed, ought to serve the community infinitely better. If I were founding a garden city in almost any European country, I should not hesitate to adopt the better way; nor would the people consent to consider anything else. Coöperation is in the European blood; but not nearly as much so in the American blood. Many of us have had experience—and "the burnt child dreads the fire."

The establishment of a successful coöperative enterprise on a purely democratic basis requires fidelity to

the principle on the part of the membership, and a willingness to make some sacrifices at the beginning. The temptation to turn their backs on their own store in order to make immediate savings is often too strong to be resisted. In the long run it would pay better to be good coöoperators, but it happens that many people have their eyes fixed on the short run, and if they can take a ten-dollar bill and buy eleven-dollars' worth of goods at a bargain sale, it is hard for them to realize that, by crippling their own store, they may be losing a dollar in the end instead of making one. The problem is to preserve the solidarity of the community in support of its coöperative institutions. This problem is likely to be particularly difficult in garden cities lying close to a great town, where the people go back and forth every day. Under these circumstances it is incumbent upon the responsible founders of the community to consider very carefully whether the coöperative store, sound as it is in principle, would be wise in practice.

Another difficulty is the dissension which frequently arises over management—both as to methods and personnel. I could relate instances from my own experience which would seem ludicrous, if they hadn't been so tragic; instances where successful business was established, then incontinently wrecked by the struggle of the factions over the manager's job, which paid but a pitiful salary, and no thanks.

Another prolific cause of trouble arises from the question of credits. The private merchant can extend or refuse credit without creating serious enmity, but it is a different thing in the case of the coöperative mer-

chant. The man who has been refused credit is very likely to raise a rebellion, with the object of overthrowing the management. Where the choice of manager, in the first instance, is left to the town meeting, it very often happens that the best vote-getter is not the best business man. After a while the community learns "Who's Who," but the choice is usually made before there has been opportunity to take stock of the new citizenship.

For all these reasons, the coöperative store should be thoughtfully considered by the founders before it is included in the scheme of institutions. The truth is that the plan can not be successful in the best and highest sense, unless the people are animated by the true spirit of coöperation. Without this spirit, the enterprise is bound to fail. Perhaps it ought to fail. The game is not worth the candle, unless the spiritual value of brotherhood is realized; unless men and women truly prefer to work for and with each other, rather than against each other.

Twenty years ago, I should have urged the coöperative store as one of the foundation stones of the garden city. I still believe it eminently desirable. To me, it would seem pitiful that the community should be deprived of its benefits, both spiritual and material; but we learn by experience, and my experience has taught me this: Coöperation can only be established in a small American community by means of the strong hand, resorting to strong methods. It can not be left entirely to voluntary action; nor can the management be safely left wholly to popular choice at the beginning. Utah made a success of coöperative institutions, because they



THE COÖPERATIVE DEPARTMENT STORE

Upper picture shows such a store at Atascadero, California; lower picture, interior view of same store



were an integral part of a great social system taught in the schools and the churches. There have been some recent instances of success in new communities governed by a single powerful influence.

I should suggest three precautions in the organization of coöperative stores for garden cities:

1. In order to make sure that everybody shall contribute to the necessary capital, and in the same proportion, the price of the stock should be incorporated in the price of the land and made inseparable therefrom. In this way, adequate capital would be assured from the beginning, and the danger that has often recurred—the danger that many would seek to enjoy the benefits of the enterprise without sharing its risks or burdens—would be avoided.

2. Provision should be made for one commodious and attractive department store, which might well have accommodations for bank and postoffice, and restrictions placed in the deeds preventing the sale or use of any other property for business purposes—this, as a means of preventing the growth of mushroom competition which is likely to do considerable harm and very little good.

3. For a period of three to five years sole management should be vested in the parent corporation, or in the Government agency having charge of the enterprise when the principle of national leadership becomes effective.

With these precautions, there would be reasonable assurance of a store in which every landowner would be a partner; mushroom competition, with its unsightly buildings, would be avoided; and there would be no

occasion for internecine struggles over the management until the pioneer period had been safely passed and the enterprise become firmly established. Under these conditions the people would get the benefits of coöperation without its dangers and drawbacks, though they would do so at the cost of accepting a certain amount of autocracy. But without the assurance of sufficient capital and good management, coöperative enterprises are most hazardous undertakings.

The organization of a beautiful social life, as outlined in a previous chapter, presents few difficulties. Even here, however, the founders should supply leadership until the new institutions have taken root and begun to flourish.

Another provision of great importance in such a community is the demonstration place. This should take the form of the ideal home-in-a-garden, brought to its fullest development at the earliest possible time. Indeed, it ought to be one of the very earliest steps in the construction programme, if it is to have the highest usefulness. Men have a picture in their minds, which they have, perhaps, reduced to paper, but they must see the living thing established on the earth in order to comprehend it in its perfection and its manifold variety. The making of such a demonstration place naturally requires technical knowledge, experience, and devotion to the ideals of the garden home. There are a number of colonies in California which, if they have accomplished nothing else, have been the nurseries of such skill, experience and spirit, and they may now be drawn upon to plant the seeds of the New Earth throughout America and the world.

CHAPTER IV

THE FARM CITY AND THE GARDEN CITY

But since we live in an epoch of change, and, too, probably of revolution, and thoughts not to be put aside are in the minds of all men capable of thought, I am obliged to affirm the one principle which can and in the end will close all epochs of revolution—that each man shall possess the ground that he can use, and no more.

John Ruskin.

THE garden city is, of course, designed chiefly for city workers with country minds. The principles of the garden home are, however, capable of application to larger units within reasonable limitations.

The Farm City is a term now coming into use to describe a new form of rural life in which much emphasis is given to the social side. As the people of the garden city will depend for cash income chiefly, if not wholly, upon their business or employment in the big town, so the people of the Farm City will depend entirely upon the land. Even so, the unit of ownership in the Farm City should be much smaller than that now generally prevailing in the agricultural industry. Methods of cultivation should be higher and more intensive. A system of agriculture suited to the climate and locality should be carefully worked out in advance. There would be the same need for demonstration and instruction as in a garden city, and far greater need of organized buying and selling. Civic centers, with well-planned

social and intellectual life, would be feasible in the Farm City, and should also be included in the founders' plan. Finally, the Farm City should not be located at any great distance from an urban center. Naturally, it would be beyond the district feasible for garden cities whose inhabitants go back and forth to town each day.

To speak in more concrete terms, one might say that a circle of from ten to fifteen miles around a great city would mark the logical limitations of the garden-city area, at least until means of transit become cheaper and quicker; while a circle of from forty to fifty miles would mark out the logical limitations of the Farm City area. Abundant land can be had for both purposes almost everywhere within these limitations; hence, it is unnecessary to go farther.

The size of the holding under the Farm-City plan is a matter only to be determined by experience. Plainly it should not be a rigid unit, since men differ so widely in experience, taste, amount of capital, and size of family. The best unit would be so much land as each family could use to the best advantage without hiring help. This rule could not be literally enforced at all seasons, unless, perhaps, by exchange of labor among neighbors; but it is a sound ideal, and should be approximated as nearly as possible. The country needs—not more tenants and hired-men, but more self-employed proprietors.

When a Farm City is near enough to a large urban center, with good transportation facilities, a very small holding will suffice to yield a good living to an industrious family. This is particularly true when poultry or truck gardening, or a combination of both, is the

reliance for cash income. So low as from two to five acres will support a family in comfortable circumstances,—if they know how to do it. This unit is common in Holland, Denmark, and France. There are many such “pocket-handkerchief” farms in Utah and California; and there are “one-acre farmers” who have done well. Usually they specialize on a very restricted line of products for market, while raising a variety of things for home consumption.

Prince Kropotkin has written convincingly along this line, as have others. But Bolton Hall, with his “Three Acres and Liberty” and “A Little Land and a Living,” is the thinker and teacher to whom I am most deeply indebted for faith and inspiration in this line of work. Many a smiling garden, and many a humble roof, trace back to the study of this scholarly man and lover of the race. How far his influence has gone no man can say.

It is quite possible, however, to preserve nearly all the attractive features of the home-in-a-garden system, where the holding reaches from ten to forty acres; and it seems probable that these are the figures which will be most generally adopted, in the United States at least, during the next decade. But that will by no means mark the end of the evolution of forms of country life which aim to raise the standard of living to the highest levels.

It is probable that future development will proceed along two well-marked and divergent lines. In one line the social and spiritual considerations will be subordinated to the production of wealth. In the other, the production of wealth, as represented by large sur-

plus crops for world markets, will be subordinated to the higher good of humanity. The former will require the use of broad acres, labor-saving machinery, and great numbers of hired hands; for it will be industrial farming pure and simple. The latter will be the home-in-a-garden with organized garden and farm cities. Organization will begin with wholesale purchase and improvement of land, going on through all departments of their social and economic life, and reach upward to the spiritual heights.

The determining factor will be that of capital requirement. While large capital will be essential to the industrial farm, comparatively little capital will suffice for the garden home or farm.

The development clearly foreshadowed by the inexorable law of social and economic growth may be stated thus: "Big farms bigger; small farms smaller."

While I have quite deliberately refrained from discussing the vexed question of land tenure in these pages,—a question that will never seriously arise until men have a far keener appreciation of the earth as the source of all material good than now obtains, at least in the United States—it ought to be said that the genuine home-builder, and not the speculator, is the man who deserves consideration in the shaping of our social policies. In California, where these policies are furthest advanced, the settler in state colonies is required to live on his land ten years; if he desires to sell and move away within that period, he must obtain written consent of the State Board of Land Settlement. This will be given when circumstances warrant, but if the settler goes, he is not permitted to carry away that por-

tion of "unearned increment" in his land created by the labor and presence of the entire community.

An interesting case arose quite early in the history of the movement. At the end of the first year a settler applied for permission to sell. It was found that the price he would receive represented a profit of \$8,000 on his investment. He was told that this profit was due, in large part, not to his own exertions, but to the achievement wrought out by a hundred families, with all their private and public improvements. He was permitted to sell at a price that returned his entire investment, together with 6 per cent interest and \$2,000 more as compensation for his year's work. The remainder of the profit was given to the community that had rightfully earned it and could apply it to useful purposes for the common benefit.

Such a system does no injustice to the man who is working in good faith to build a home on the land. The other kind have no moral right to speculate at the expense of their fellows.



PART THREE

MECHANICS OF THE GARDEN HOME

CHAPTER I*

MAKING THE SOIL OVER

THE home gardener must use the soil he has, but he can improve it if it is poor, and he must do this as far as possible. Stable manure will help even the richest soil, and you are not likely to use too much of it. During a single season professional gardeners apply as much as six inches of it. Coarse manure should be applied and thoroughly plowed or spaded under in the fall. In the spring, fine, rotted manure is applied, just before plowing, or spading, preceding the planting of any crop. If the ground is fairly rich, and well-rotted manure is scarce, the manure may be scattered in the row only, and should be mixed into the soil before the planting of seed.

Loam is the best garden soil. Sand, with manure, gives good results. Clay is hardest to work, but is greatly improved by well-rotted manure and vegetable matter, called humus. These should be well worked in with hoe and rake. Sifted coal ashes, entirely free from clinkers, will help loosen up clay when mixed into it, but will not remove an acid condition nor increased fertility.

* This chapter, as well as the two following, are taken by permission, from instructions prepared for the National War Garden Commission, by twenty-two leading American experts. The Planting Table, and the page entitled "Arrangement of Season's Crops," are from the same eminent source.

Many gardeners experience difficulty in obtaining supplies of well-rotted manure. In such cases, commercial fertilizers should be used. Even when stable manure has been secured and worked into the soil, it is well to supplement with moderate quantities of quick-acting fertilizer, in order to give plants an early start, and hasten maturity.

It is safest to rely upon the ready-mixed fertilizers, usually obtainable at seed and hardware stores. Several specially prepared mixtures in convenient packages are now on the market. For large areas 100 to 200-pound bags may be obtained. A mixture containing from 3 to 4 per cent nitrogen, and from 8 to 10 per cent phosphoric acid is about right for the average garden. Your dealer will inform you on this point. If the fertilizer also contains potash, so much the better.

Where no manure is used the fertilizer should be spread over the surface of the finely prepared seed-bed at the rate of 5 pounds for a plot 10-feet square, just before planting. The surface soil should then be thoroughly raked, so as to mix the fertilizer evenly to a depth of 2 inches. Never place seeds or transplanted plants in direct contact with fertilizer. Thorough mixing of the fertilizer with the soil is essential to prevent injury to seed or roots. Where manure has been worked into the soil, reduce the fertilizer application one-half.

Tomatoes, egg-plants, spinach, and some other crops requiring long growing seasons, are materially benefited by a second application of fertilizer when half grown. Side dressings of this kind should be scattered between the rows at the rate of four ounces (one-half pint) to ten feet of row, when rows are spaced two feet apart,

and pro rata for rows spaced a greater or lesser distance. To insure even distribution, mix the fertilizer with fine, dry earth just before spreading.

Compost is especially desirable when quick growth is wanted. Compost is thoroughly rotted manure or organic matter. It should be prepared from six to twelve months before being used, by putting the manure and other materials in piles having perpendicular sides and flat tops. These piles are usually from two to four feet high and six to eight feet long.

Besides the usual waste of garden rubbish, there is a large waste of leaves, weeds, and the skins and other unused portions of fruits and vegetables. These should all be thrown on the compost pile to decay for use on the garden next spring. Destroy all plants which are diseased. The compost pile should be built up in alternate layers of vegetable refuse a foot thick, and earth an inch or more thick. The earth helps to rot the vegetable matter, when mixed with it. The top of the pile should be left flat, in order that the rain may enter and help in the process of decay.

If the pile can be forked over once a month when not frozen and the contents well mixed together, it will decay quite rapidly and be in good usable condition in the spring. The compost may be either spread over the garden and spread under, or it may be scattered in the rows before the seed are sown. This is, of course, not as rich as stable manure, but it is a good substitute. Compost is also used as a top dressing during the growing season, for hastening growth.

In the cities and towns tons of leaves are burned every fall. This is a loss which ought to be prevented. These

leaves, properly composted with other vegetable waste and earth, would be worth hundreds of dollars to the gardens next spring.

In planning a permanent garden a space should be reserved near the hotbed, or seed bed, and in this space should be piled, as soon as pulled, all plants which are free from disease and insects. This applies to all vegetables, and especially to peas and beans, as these belong to a group of plants which take nitrogen from the air during growth, and store it in their roots. When these plants are decayed they will return to the soil, not only much of the plant-food taken from it during their growth, but additional nitrogen as well. Nitrogen in the soil is necessary for satisfactory leaf growth. The material so composed should be allowed to decay throughout the winter, and when needed should be used according to the instructions given for using compost.

Prepared sheep manure, when procurable at reasonable price, is possibly the safest concentrated fertilizer. It should be used in small quantities, rather than spread broadcast. Scatter it along the row before seed is sown; or, apply by mixing it with water in a pail stirring the mixture to the consistency of thin mush, and pour it along the rows of the plants.

Green manure is useful as a fertilizer. It consists of green plants turned under by plowing or spading. Rye is the most satisfactory for this purpose. If planted in July or August, the crop may be turned under in the spring. When not turned under until spring, the growth will prevent the leaching of soluble plant food, or the washing away of rich soil.

In sowing rye for this purpose, use at the rate of one

pound of seed to a strip of ground 50 feet long by 10 feet wide. If the ground is rough or hard, it should be cultivated just before the seed is sown and then cultivated again to cover the seed. Sow the seed between the rows of crops not yet gathered. Rye is very hardy and will sprout, even though there is frost nearly every night. At a cost of about five cents for a pound of seed, a garden of 10x50 feet can thus be treated to an application of green manure. The green rye plants soon decay when turned under, and answer the same purpose as a light dressing of manure.

Green manure, however, should not be relied upon to do the work of stable manure, as it does not provide phosphorus or potassium.

Land which has long been unused, or land in lawns, is apt to be sour. To remedy this condition, apply, evenly, one pound of air-slaked lime, or two pounds of ground limestone, to every 30 square-feet. The lime should be applied and raked in to a depth of two inches, when the seed bed is being prepared in the spring. Instead of lime, two pounds of unleached wood-ashes may be used. Do not apply lime at the same time as manure or mixed fertilizers, as it will cause loss of nitrogen.

As an addition to soil, lime is of considerable value, besides correcting acidity, it changes the physical structure of the soil. One of the elements of lime is calcium, which is required for plant growth.

Small livestock and the garden work nicely together. The garden feeds the chickens with green stuff; the chickens feed the garden with natural fertilizer of a superior brand. The same is true of squabs, rabbits and goats.

CHAPTER II

HOW TO HAVE A GOOD GARDEN

HAVE a plan for your garden—drawn to scale on paper—before you start, to give proper order in planting and to enable you to buy the right amount of seeds in advance while the selection is good.

Put in one general group small plants like beets, onions, lettuce, carrots, radishes and parsnips. In another general group put larger plants like corn, tomatoes and potatoes. Spreading ground-vines, like melons and cucumbers, which need wider spacing, should be put in another general group. The reason for this grouping is that the various plants in a group need similar general treatment as well as spacing.

In making a plan, provide space in which to enter costs and yield of the various crops. This will give you a complete record which will be useful another year. Another helpful use of the plan is that it will guide you in the rotation of next year's crops. For this purpose save your plan for next season.

In the location of a garden it is not always possible to choose conditions as to sunlight. It is important, therefore, that in the arrangement of the varieties of vegetables which are to be planted, due care should be given to providing the greatest exposure to the sun for those crops which need it most. Those plants which

must ripen their fruit, such as tomatoes and egg-plant, require the greatest amount of sunshine, while lettuce, spinach, kale and other leaf crops, require relatively less. Foliage crops must have at least three hours of sunlight a day, and plants which ripen fruits at least five hours a day. This is important.

It is important to remember that plant diseases and insects are apt to thrive in a spot in which they have become established. For this reason, those who make gardens should take care not to place the individual crops in the spot in which the same crops grew the year before. Varying the arrangement of the garden in this way will reduce the danger from disease and insects. The same vegetables in the same place each year exhaust certain food elements, and reduced yields are sure to result.

For early planting a hotbed may be made, located in a sheltered spot with southern exposure, where it will receive a generous supply of sun. A width of 6 feet is desirable, and the length should be such as to enable the use of standard 3x6 ft., hotbed sash. A simple box-like frame, 12 inches high in the rear, and 8 inches high in front will hold the sash, and give a better angle for the rays of the sun.

Dig a pit $1\frac{1}{2}$ to 2 feet deep, the size of the sash-frame to be used. Line the sides of this with boards or planks, brick or concrete, and make a tile drain, or place stones on the bottom of the pit to carry off surplus water. This pit is to be filled with fresh horse manure. The manure will require special treatment before being placed in the pit. It should be thrown into a pile and allowed to heat. When it has heated and is

steaming, fork it over into a new pile, throwing the outside material into the center. When the new pile has become well heated, fork the material once more into a new pile. This will require from ten days to two weeks, and is important, in that it gets rid of excessive heat. After this process, fill the pit with the manure, packed down firmly and evenly, level with the surface of the surrounding earth. On top of this manure make a covering of good garden loam three or four inches deep.

When the sash has been put in place, the manure will generate heat, in addition to the heat that will be derived from the sun. After this heat has reached its highest point and dropped back to between 80 and 90 degrees F. the seed should be planted. Use the best seed obtainable. Until the seed germinates, the hotbed should be kept shaded to hold moisture. This can be done by spreading over the sash strips of old carpet, heavy cloth, or newspapers. After germination, strong light will be needed. The plants must be watered each morning on clear days, and the sash left partially open for ventilation, as it is necessary to dry the foliage to prevent mildew.

Proper ventilation is essential to the production of strong, healthy plants. The sash should be raised during the warmest part of the day on the side opposite the direction from which the wind is blowing. By opening it in this way instead of facing the wind, the hotbed receives fresh air without receiving direct draft. On cold days, raise the sash slightly three or four times a day for a few minutes only. In severe weather, cover the beds with mats, straw, or manure, to keep in as much heat as possible. About two weeks before transplanting time the sash should be removed during the day to

“harden” the plants. While in the hotbed the plants should be thoroughly watered, but the water should not reach the manure underneath. Early morning is the best time for watering, so the plants will be dried before night.

An outdoor hotbed of this character should be started in the early spring—February or March.

A cold frame is useful for hardening plants which have been started in the hotbed. It is built like a hotbed, but without the pit or manure. It is built on the surface of the ground. Good rich soil should be used, and the soil kept slightly moist. In mild climates the cold frame may be used instead of a hotbed for starting plants. It is also used in the fall and early winter for growing lettuce, radishes, carrots, parsley, etc.

Not many implements are required for home gardening. The essentials are a spade or a garden fork, a hoe, a rake with steel teeth, a trowel, a dibble, or pointed stick, and a line such as is used by masons, or a piece of common string or cord to stretch between two stakes for marking off rows. In the case of hard-packed earth a pick is useful for digging. For watering, a rubber-hose is needed where pipe connections are available. Lacking this equipment, a watering-pot should be provided. A hand-cultivator or wheel hoe is useful, especially in a large garden, and saves much time and labor in turning small furrows. With simply attachments it is used for stirring the soil and the removal of weeds. The garden tractor is the latest implement, and seems likely to go into very general use. It costs about \$250, but several families might coöperate in its purchase and use.

In laying out a new garden city, it might be feasible

to arrange the gardens in the rear of the houses in each block, so that not only the plowing and harrowing, but planting and cultivation—even some of the harvesting, could be done by machinery. This would materially reduce the amount of hand labor to be done. There would still remain the berries, fruits, more delicate vegetables, flowers, lawns and livestock to be cared for by individual hand labor.

ARRANGEMENT OF SEASON'S CROPS

Peas, followed by late Tomatoes			
Peas, followed by Celery			
Onion Sets, followed by Turnips			
Corn, followed by Spinach			
Beans (bush) followed by Beets			
Beets, $\frac{1}{2}$ row; Carrots, $\frac{1}{2}$ row, followed by Corn			
Turnips, followed by Bush Beans			
Potatoes, followed by Spinach			
Spinach, followed by Potatoes			
Cabbage, with Lettuce and Radishes between, followed by Carrots			
Beans, Bush Lima			
Chard, $\frac{3}{4}$ row; Parsley, $\frac{1}{4}$ row			
Parsnips, $\frac{3}{4}$ row (radishes to mark row); Salsify, $\frac{1}{4}$ row			
Corn, followed by Kohlrabi, $\frac{1}{2}$ row; Cauliflower, $\frac{1}{2}$ row			
Peas, followed by Corn			
Beans, Bush Lima			
Early Potatoes, followed by late Cabbage			
Early Tomatoes			
Peppers, $\frac{1}{2}$ row; Potatoes, Okra or Egg-plant, $\frac{1}{2}$ row			
Potatoes			
Potatoes			
Pole Lima Beans			
Pole Beans			
Corn			
Corn			
Corn			
Cucumbers	Squash (bush crook-neck)	Squash (winter)	Musk- melon

Rows are 30 inches apart. If soil is very fertile, rows may be closer.

Planting was begun at hotbed end of garden and plantings were made a few days apart, to insure a constant supply of vegetables.

Planting table on page 266.

Mushroom culture is an art in itself, and an art unknown to many scientific gardeners. The late Adrian Bussiere was a master of the art, the son and grandson of famous Parisian growers. He once reduced his knowledge and experience to a brief formula as follows:

Mushroom culture is not as difficult as many people seem to believe; neither is there anything mysterious about it; but, for good results, the few main points to be given in this article must be strictly observed.

This culture can be practiced at all seasons of the year, under the conditions that you have (1) a cellar or cave where the temperature is rather low and stable, about 55 to 60 degrees. Below this temperature the growth of the mushroom is too slow, while with a higher temperature no mushrooms will grow. In this cave the humidity, also, must be constantly maintained. (2) The element necessary for their culture is manure from horses that work hard, and whose bedding is not changed too often. Also, for manure used in mushroom culture the bedding should be of wheat straw, or second-best oat straw, while the least desirable for this purpose is barley straw. All manure older than two weeks must be rejected, because in this time it has already started to ferment. When in possession of the amount needed for your cave, the process of fermentation is started. (3) Good spawn from a reliable house.

In possession of these three conditions, have the manure unloaded at your cave, with the water handy for

sprinkling. To obtain good results not less than three cubic yards of manure should be worked. If less is needed in your case, let the surplus go to the garden. Choose a spot of ground which is hard and even, on which to work the manure, and preferably protected from the rains. Every forkful should be well shaken out to render it evenly mixed, and laid out to form a pile 8 ft. long, 3 ft. wide, and 1 ft. high. If the manure is dry, sprinkle with a very fine sprinkler, so that the wet parts are on the outside, while the dryer material stays inside.

After this first layer is made, begin a second on top, and so continue until the pile is 4 ft. high. Tramp this well down and clean off the sides with the fork to prevent undue loss of humidity. This operation must be repeated three times—in summer every five days; in winter, every eight days. The manure is ready for the cave when it has lost its first odor. It must be humid and of a dark brown color, and when pressed between the fingers must not drip. The odor must have changed and resemble more the odor of mushrooms.

Before installing the manure, prepare the frames on the floor of your cave, for which purpose lumber 1x12 is used. The size of the bed must not exceed 4 ft. in width, as a larger bed might give an excess of fermentation, which is very dangerous in this culture.

These frames are filled in layers with the prepared manure, shaking it up again, forkful after forkful. The manure will now undergo another process of fermentation. With the thermometer, carefully assure yourself of the temperature of the bed, which should be after eight days about 70 to 75 degrees, to fall to 60

to 65 degrees, its normal temperature when the bed is ready for the spawn.

The bricks are divided into eight equal pieces, which are inserted into the bed (lifting the manure) 2 inches deep, 12 inches apart. After about 15 or 20 days the spawn will be germinating, which may be noticed by the bluish specks around the insertions. This is the sign to cover the beds with a layer of good soil, virgin and calcareous preferred. This layer must not exceed $1\frac{1}{2}$ inches, after which the bed is lightly sprinkled.

The mushroom, being a plant, needs air; therefore a good system of ventilation must be established, which is worked at night. The ventilation openings are made on the east and west sides.

The passage between the beds must be sprinkled when necessary to keep the humidity constant. The beds must be sprinkled very moderately. Before the crop appears, it is better to not sprinkle at all.

It takes three months from the reception of the manure till the first picking, and the harvest lasts, also, about three months. By dividing the space a system of rotation can be established to assure a continuous production.

CHAPTER III

THE WINTER FOOD SUPPLY

THE true home gardener will not be content merely to draw upon his garden in summer and autumn, but will produce a surplus of vegetables, berries and fruit to carry his family through the winter and well into the spring.

The National War Garden Commission, in dealing with the problem of food supply, put great emphasis upon this feature, and rapid strides were made in popularizing all forms of canning and preserving as a household and community art. In the instructions provided by the foremost experts the Commission spoke of five principal methods, but recommended above all others for home use the Single-Period Cold-pack Method, because of its simplicity and effectiveness. That method is described as follows in the manual prepared by the Commission, and distributed among the people by the million:

The prepared vegetables or fruits are blanched in boiling water or live steam, then quickly cold-dipped and packed at once into hot jars, the contents covered with boiling water or syrup, and the jars partially sealed and sterilized in boiling water or by steam pressure. The jars are then sealed tight, tested for leaks and stored.

The Single Period Cold-pack Method is a simple and sure way of canning. It insures a good color, texture and flavor to the vegetable or fruit canned. In using this method, sterilization is completed in a single period, saving time, fuel and labor. The simplicity of the method commends it. Fruits are put up in syrups. Vegetables require only salt for flavoring and water to fill the container.

Another advantage is that it is practicable to put up food in small as well as large quantities. The housewife who understands the process will find that it pays to put up even a single container. Thus, when she has a small surplus of some garden crop she should take the time necessary to place this food in a container and store it for future use. This is true household efficiency.

A serviceable Single Period Cold-pack canning outfit may be made of equipment found in almost any household. Any utensil large and deep enough to allow an inch of water above jars, and a false bottom beneath them, and having a closely fitting cover, may be used for sterilizing. A wash-boiler, large lard can or new garbage pail serves the purpose where canning is to be done in large quantities. Into this utensil should be placed a wire or wooden rack to hold the jars off the bottom, and so constructed as to permit circulation of water underneath the jars.

For lifting glass-top jars, use two button-hooks, or similar device. For lifting screw-top jars, suitable lifters may be bought for a small sum. A milk carrier makes a good false bottom, and if this is used the jars may be easily lifted out at the end of the sterilization period.

There are upon the market outfits on the order of the wash-boiler or pail type of home-made canner. These are excellent and are especially desirable if one has considerable quantities of vegetables or fruits to put up. There are also commercial canners convenient for out-door work, having fire-box and smoke-pipe all in one piece with the sterilizing vat. As with the home-made outfit, containers are immersed in boiling water.

Water Seal Outfits are desirable, as the period of sterilization is shorter than in the home-made outfit, and less fuel is therefore required. The outfit consists of two containers, one fitted within the other, and a cover which extends into the space between the outer and the inner container. The water-jacket makes it possible for the temperature in the inner container to be raised several degrees above 212° F.

Canning is very rapid when sterilization is done in *Steam Pressure Outfits*. There are several canners of this type. Each is provided with pressure gauge and safety valve, and they carry from 5 to 30 pounds of steam pressure. This type is suitable for home or community canning.

Aluminum Pressure Outfits are satisfactory for canning and for general cooking. They carry from 5 to 30 pounds of steam pressure. Each outfit is provided with a steam pressure gauge and safety valve.

At high altitudes the boiling point of water is below 212° F. At moderate elevation, satisfactory results may be obtained in the use of the hot-water bath by increasing the time of sterilization 10 per cent for every 500 feet above 1,000. To insure best results in very

high altitudes, however, a steam-pressure canner, or aluminum pressure cooker is recommended to be used. This type of canner produces a temperature up to 250° F. at 15 lbs. pressure, insuring proper sterilization, and also saving time and fuel. A steam pressure canner may be bought around \$20. Several families may use one and divide the cost.

In using the pressure canners and aluminum cookers the following formula is given:

1. Have water in the canner up to the false bottom, but not above it. Keep this water boiling during the time that packed jars are being placed in the canner, and add water occasionally to prevent its boiling dry.
2. To prepare product follow instructions as hereinafter given. As each jar is packed, set it at once, partially sealed, in the canner. The cover of the canner may be put in position, but not clamped.
3. When all of the filled jars are placed in the canner, put on the cover and fasten opposite clamps moderately tight; then tighten each pair of clamps fully.
4. The petcock should be left open until live steam escapes from it. The canner should be steam-tight, and no steam should escape except through the open petcock. When live steam escapes, close the petcock completely.
5. Begin to count time when the steam gauge registers the required temperature.
6. Maintain a uniform pressure during the sterilizing period by setting the weight on the arm, when the proper pressure is registered on the steam gauge, so that surplus steam will escape at that desired pressure.

A uniform temperature may be maintained also by turning down the flame or moving the canner to a less hot part of the stove.

7. When the sterilization period is complete, do not allow steam to escape, but allow the canner to cool until the steam gauge registers zero.

8. Open petcock, remove the cover of canner, and take out the jars. As each jar is removed, complete seal at once.

For home use, glass jars are more satisfactory for canning than tin. Tin cans are used chiefly for canning on a large scale for commercial purposes. There are many jars of different styles and prices on the market; and provided the seal is not defective, equally good results may be obtained from all. Glass is a popular household choice, because one can see through it, and thus have some idea as to the condition of the contents. Glass jars may be used for years if properly cared for.

All types of jars which seal readily may be used. Jars having glass tops held in place by bails are especially easy to handle while hot. Screw-top jars are serviceable. Glass caps held in place by separate metal screw bands are now on the market, as well as the one-piece sort of former years. Vacuum seal jars are very easily managed. Tops for Economy jars should be purchased each year. The composition material, which takes the place of rubber, should have a rubber-like texture. If of mealy consistency it is unfit for use and the top will not make a tight seal.

The color and shape of jars are not of first moment, but are to be considered. Containers made of white glass should be used if the product is to be offered for

sale, as blue or green glass detracts from the appearance of the contents. Wide-mouthed jars are best for packing whole products and are easiest to clean. Small-necked bottles can be used for fruit juices. Large-mouthed bottles can be used for jams, marmalades and jellies.

Jars should be tested before they are used. Some of the important tests are here given:

1. When using glass-top jars, first examine for cracks; then run a finger around the edge of necks of jars, and if there are sharp projections, file them off, or scrape them off with an old knife. If left on, they may cut rubbers and interfere with perfect sealing. Place a top on a jar. It will slip from side to side, but should not rock, when tapped. Rocking tops will not make a tight seal. Sometimes the fault is with the top and sometimes with the neck. Defective jars and tops when discarded for canning purposes may be used as containers for jams, etc. The top bail should go into position with a light snap. If too loose, it should be taken off and bent slightly inward in the center. If too tight, bend outward.

2. In screw-top jars, only the lacquered or vulcanized tops should be employed. Screw the top on tightly without the rubber. If the tip of a knife or fingernail can be inserted under the rim the tops should not be used for cold-pack canning. If the defect is very slight, however, it may be remedied by pressing a knife handle on the lower edge against a hard surface, thus straightening the offending bulge. Another test is made by putting on the rubber, screwing the top on tightly, and then pulling the rubber out. If the rubber returns to

place, the top does not fit, and should not be used on the jar.

3. The Vacuum seal jars may be tested in the same way as the glass-top jars. See if the tops rock if tapped, when placed on the jar without fastening.

Buy new rubbers every year, as rubbers deteriorate from one season to another. A good rubber for cold-pack canning must be such as to stand four hours of continuous boiling, or one hour under 10 pounds of steam pressure. The combination of moist heat plus acids and mineral matter in vegetables and fruits tends to break down the rubbers during sterilization. Rubbers kept in a hot or very warm place, as for example on a shelf near the kitchen range, will deteriorate in quality. Be very particular about the rubbers used. Spoilage of canned goods has been traced frequently to the use of poor rubbers.

It is always well to test rubbers when buying. A good rubber will return to its original size when stretched. It will not crease when bent double and pinched. It should fit the neck of the jar snugly. It is cheaper to discard a doubtful rubber than to lose a jar of canned goods.

Vegetables and fruits should be sorted according to color, size and ripeness. This is called grading. It insures the best pack and uniformity of flavor and texture to the canned product, which is always desirable.

The most important steps in canning are the preliminary steps of blanching, cold-dipping, packing in hot, clean containers, adding hot water at once, then immediately half-sealing jars and putting into the

sterilizer. Spoilage of products is nearly always due to carelessness in one of these steps. Blanching is necessary with all vegetables and some fruits. It insures thorough cleansing and removes objectionable odors and flavors and excess acids. It starts the flow of coloring matter. It reduces the bulk of greens and causes shrinkage of fruits, increasing the quantity which may be packed in a container, which saves storage space.

Blanching consists in plunging the vegetables or fruits into boiling water or exposing them to steam for a short time. For blanching in boiling water, place them in a wire basket, or piece of cheesecloth. The blanching time varies from one to fifteen minutes, as shown in time table, and the products should be kept under water throughout the period. Begin counting time when the articles are first placed in boiling water or steam.

Spinach and other greens should not be blanched in hot water. They must be blanched in steam to prevent the loss of mineral salts, volatile oils and other valuable substances. To do this, place them in a colander and set this into a vessel which has a tightly fitting cover. In this vessel there should be an inch or two of water, but the water must not be allowed to touch the greens. Another method is to suspend the greens in a closed vessel above an inch or two of water. This may be done in a wire basket or in cheesecloth. Allow the water to boil in the closed vessel fifteen minutes. Excellent results are obtained also, by the use of a steam-cooker or steam-pressure canner.

When the blanching is complete, remove the vege-

tables or fruits from the boiling water or steam, and plunge them once or twice into cold water—the colder the better. This latter process is the Cold Dip. It hardens the pulp under the skin, so that the products are not injured by peeling. It also sets the coloring matter. Do not allow the products to stand in the cold water.

Always blanch and cold-dip only enough products to fill one or two jars at a time. The blanching and cold-dipping should follow at once when the vegetable or fruit is prepared, and the packing into jars should immediately follow the blanching and cold-dip.

Processing is the sterilization treatment to which products are subjected after packing them into jars. As soon as the jar is filled put the rubber and cap in place and partially seal by adjusting top bail, or screwing on top with thumb and little finger. If Economy jars are used the top should be held in place with clamp. The jar should then be put into sterilizer at once. In using the hot-water bath outfit, count the time of sterilization from the time the water begins to boil. The water in the sterilizer should be at or just below the boiling point when jars are put in. With the Water Seal Outfit begin counting time when the thermometer reaches 214° F. With the Steam Pressure Outfit, begin counting time when the gauge reaches the number of pounds called for in directions.

When the processing is finished, at once remove and seal each jar.

It is important to plan your work so that whatever may be needed will be ready for use. Arrange every-

thing conveniently in advance. Preliminary provisions include:

1. A reliable alarm clock in a convenient place (set to ring when the sterilizing is done).
2. All the necessary equipment in place before beginning work.
3. Jars, tops and rubbers carefully tested.
4. Fresh, sound fruits and vegetables.
5. Plenty of hot water for sterilizer, blanching, warming the jars, and for pouring into packed jars.
6. Salt or syrup at hand.
7. Reliable instructions carefully followed.
8. Absolute cleanliness.

It must not be forgotten that success in canning demands careful attention to every detail. No step should be slighted. Follow one set of instructions closely, and do not attempt to combine two, no matter how good both of them may be. To attempt to follow two sets will inevitably cause spoilage.

The experience of the U. S. Department of Agriculture during the last five years indicates that 75 per cent of the spoilage has been due to the use of poor rubbers, the use of old tops on screw-top jars, and improper sealing, resulting from the use of defective joints, springs, and caps. Another fruitful source of trouble is that people sometimes undertake to can stale or wilted vegetables. No amount of sterilizing will overcome staleness. Careless handling is also sure to cause loss. Absolute cleanliness in every step is essential.

In sterilizing, care must be exercised to see that the

temperature is high enough, and maintained for the proper length of time.

In other words, do not blame the method for failure. *Follow directions carefully and prevent failure.*

In canning by the Single Period Cold-pack method, it is important that careful attention be given to every detail. Do not undertake canning until you have familiarized yourself with the various steps, which are as follows:

1. Vegetables should be canned as soon as possible after picking; the same day is best. Early morning is the best time for gathering. Fruits should be as fresh as possible.

2. Before starting work, have on the stove the boiler, or other holder in which the sterilizing is to be done, a pan of boiling water for use in blanching, a vessel containing water to be used for warming several jars at a time, and a kettle of boiling water for use in filling jars of vegetables; or, if canning fruits, the syrup to be used in filling the jars. Arrange on this working table all necessary equipment, including instructions.

3. Test jars and tops. All jars, rubbers and tops should be clean and hot at the moment of using.

4. Wash and grade product according to size and ripeness. (Cauliflower should be soaked one hour in salt water, to remove insects, if any are present. Put berries into a colander and wash, by allowing cold water to flow over them, to prevent bruising.)

5. Prepare vegetable or fruit. Remove all but an inch of the tops from beets, parsnips and carrots, and the strings from green beans. Pare squash, remove seeds and cut into small pieces. Large vegetables

should be cut into pieces to make close pack possible. Remove pits from cherries, peaches and apricots.

6. Blanch in boiling water or steam as directed. Begin to count time when the product is immersed.

7. Cold-dip, but do not allow product to stand in cold water at this or any other stage.

8. Pack in hot jars, which rest on cloths wrung out in hot water. Fill the jars to within $\frac{1}{4}$ to $\frac{1}{2}$ inch of tops. (In canning Lima beans, squash, corn, peas, pumpkin and sweet potatoes fill the jars to within 1 inch of the top, as these vegetables swell during sterilization. In canning berries, to insure a close pack, put a two or three inch layer of berries on the bottom of the jar and press down gently with a spoon. Continue in this manner with other layers until jar is filled. Fruits cut in half should be arranged with pit surface down.)

9. Add salt and then boiling water to vegetables to cover them. To fruits, add hot syrup or water.

10. Place a new wet rubber on jar and put top in place.

11. With bail-top jar adjust top bail only, leaving lower bail, or snap, free. With screw-top jar, screw the top on lightly, using only the thumb and little finger. (This partial sealing makes it possible for steam generated within the jar to escape, and prevents breakage.) On vacuum seal jars adjust spring securely.

12. Place the jars on rack in boiler or other sterilizer. If the home-made or commercial hot-water bath outfit is used, enough water should be in the boiler to come at least one inch above the tops of the jars, and the water, in evaporating, should never be allowed to

drop to the level of these tops. In using the hot-water bath outfit, begin to count sterilizing time when the water begins to boil. Water is at the boiling point when it is jumping or rolling all over. Water is not boiling when bubbles merely form on the bottom, or when they begin to rise to the top. The water must be kept boiling all of the time during the period of sterilization.

13. Consult time-table, and at the end of the required sterilizing period, remove the jars from the sterilizer. Place them on a wooden rack or on several thicknesses of cloth to prevent breakage. Complete the sealing of jars. With bail top jars this is done by pushing the snap down; with screw-top jars by screwing cover on tightly.

14. Turn the jars upside down as a test for leakage and leave them in this position until cold. Let them cool rapidly, but be sure that no draft reaches them, as a draft will cause breakage. (If there is any doubt that a bail-top jar is perfectly sealed a simple test may be made by loosening the top bail and lifting the jar by taking hold of the top with the fingers. The internal suction should hold the top tightly in place when thus lifted. If the top comes off, put on a new wet rubber and sterilize 15 minutes longer for vegetables and 5 minutes longer for fruits.) With screw-top jars try the tops while the jars are cooling, or as soon as they have cooled; and, if loose, tighten them by screwing on more closely. Vacuum seal jars should be placed upright while cooling, and the clamp removed when the jar is cool. Then lift by the top and turn upside down, as a test for leakage.

15. Wash and dry each jar, label and store. If

storage place is exposed to light, wrap each jar in paper—preferably brown, as light will either fade or darken the color of products canned in glass. The boxes in which jars were brought afford good storage. Store in a cool, dark place, preferably dry. Exposure to mold will cause decay of rubber, allowing the leakage of air into jars. Paper wrappings prevent mold. Care should be taken to store canned vegetables and fruits where they will be protected from freezing. If the place of storage is not frost-proof, the jars should be removed to a warmer place during severe weather.

Time Table for Scalding, Blanching and Sterilizing of Fruits and Vegetables by One Period Cold-pack Method

Products	Scald or Blanch	Hot-water Bath Outfits at 212°	Water Seal Outfits at 214°	Steam Pressure 5 to 10 Pounds	Pressure Cooker 10 to 16 Pounds
<i>Fruits of all kinds</i>					
Apricots	1 to 2	16	12	10	5
Blackberries	No	16	12	10	5
Blueberries	No	16	12	10	5
Cherries (sweet)	No	16	12	10	5
Dewberries	No	16	12	10	5
Grapes	No	16	12	10	5
Peaches	1 to 2	16	12	10	5
Plums	No	16	12	10	5
Raspberries	No	16	12	10	5
Strawberries	No	16	12	10	5
Citrus Fruits	1 1/2	12	8	6	4
Cherries (sour)	No	16	12	10	5
Cranberries	No	16	12	10	5
Currants	No	16	12	10	5
Gooseberries	No	16	12	10	5
Rhubarb (blanch before paring)	1 to 2	16	12	10	5
Apples	1 1/2	20	12	8	6
Pears	1 1/2	20	12	8	6
Figs	15	40	30	25	20
Pineapple	10	30	25	25	18
Quince	6	40	30	25	20
<i>Special Vegetables and Combinations</i>					
Tomatoes	1 to 3	22	18	15	10
Tomatoes and corn ... T. 2; C. 10	90	75	60	45	
Egg-plant	3	60	45	45	30
Corn on cob or cut off ..	5	180	90	60	45
Pumpkin	5	90	50	40	35
Squash	5	90	50	40	35
Hominy	5	120	90	60	40
Cabbage or Sauerkraut	5	90	75	60	35

*Time Table for Scalding, Blanching and Sterilizing of Fruits and Vegetables by One Period Cold-pack Method**Greens or Pot Herbs*

Asparagus	5	120	90	50	35
Brussels sprouts	5	120	90	50	35
Cauliflower	5	120	90	50	35
Pepper cress	15	120	90	50	35
Lamb's quarters	15	120	90	50	35
Sour dock	15	120	90	50	35
Smartweed sprouts ..	15	120	90	50	35
Purslane or "Pusley" ..	15	120	90	50	35
Pokeweed	15	120	90	50	35
Dandelion	15	120	90	50	35
Marsh marigold	15	120	90	50	35
Wild mustard	15	120	90	50	35
Milk weed (tender sprouts and young leaves)	15	120	90	50	35

Pod Vegetables

Beans (Lima or string)	5	120	90	60	40
Okra	5	120	90	60	40
Peas	5	120	90	60	40

Roots and Tubers

Beets	6	90	75	60	35
Carrots	6	90	75	60	35
Sweet potatoes	6	90	75	60	35
Other roots and tubers, as parsnips or turnips	6	90	75	60	35
Soups—all kinds	—	90	75	60	45
Shellfish	3	180	120	90	60
Poultry and game ..	20	210	180	150	60
Fish	5	180	180	150	90
Pork and beef	30	240	240	210	90

CHAPTER IV

LIVESTOCK FOR THE GARDEN HOME

IN earlier pages the claims of various kinds of small livestock logically pertaining to the home in a garden have been set forth from the standpoint of so many elements entering into the luxurious table. Something has been said of methods as related to the small holding, since it would not be feasible to keep chickens, for example, as they are usually kept on the farm. The true garden home is a condensed farm, to the extent of supplying many things for family use: and livestock must be housed and fed in accordance with this principle.

Housing methods have been touched upon in preceding pages. In dealing with these and also with rations for chickens, squabs, rabbits and goats, I have followed formulas supplied by the Government, or drawn upon the experience of persons with whose work I am familiar, and whom I know to have been especially successful. There are, of course, many different ways of housing and feeding hens. Elsewhere I have spoken of Charles Weeks and his methods of housing. His suggestions for feeding laying hens are as follows:

Dry Mash: 4 parts cracked wheat; 1 part medium cracked corn (Indian corn or maize); 1 part good quality dried-beef scrap; $\frac{1}{4}$ part soy bean meal (coarse

ground); $\frac{1}{4}$ part oil cake meal (linseed); $\frac{1}{4}$ part charcoal.

Grain mixture: 3 parts whole wheat and 1 part Egyptian corn (perhaps Kaffir corn, where Egyptian is not grown). If hulled oats and barley are added to this in same proportions as Egyptian corn, it will add variety. Mr. Weeks gets best results by keeping this grain before his hens, the same as the dry mash. He has a hopper with two compartments of equal size—one filled with the dry mash, one with the mixed grain. He never, under any circumstances throws the grain on the floor, as the hens will eat more or less filth and kick up a dust that is very bad for them.

Mr. Weeks gives the hens a variety of fresh green feed. The three best are kale, wurzel beets and alfalfa. Barley, beets, cabbage and rape for winter, and kale, beet-tops and alfalfa for summer is his programme. He says you must have plenty of rich soil and good water and keep the green stuff growing and in front of your hens to make them produce the eggs.

Mr. Clarence Ray King, of Hayward, California, one of the most successful producers in the country, uses this ration for squabs: Wheat, Egyptian corn, milo maize, small yellow corn, dry peas, hemp seed and buckwheat, mixed in certain proportions which vary at different seasons. For example, he feeds more whole corn in winter, because it is very heating. A little lettuce once a week is nice, but not of vital importance, according to Mr. King. Plenty of fresh water should always be on hand, as they like to take frequent baths.

The experience of Mrs. W. W. Hevener as an incident of acre-farming has been referred to elsewhere. She

makes the following suggestions with reference to the delicate art of raising turkeys:

"Let them fast the first day after hatching, then for two weeks feed them bread-crumbs, hard boiled eggs (shell and all), and onion. Feed sparingly, as too much is sure death. However, they may have all the lettuce and onion they will eat. They must have grit, charcoal and pure water at all times. When two weeks old, mix in a little cracked wheat, and about six weeks before Thanksgiving, start them on corn." Mrs. Hevener started with five turkeys in a coop 10x12, letting them range over about an acre of ground, when they got older, allowing them to roost in the trees at night. (This was in California.) Later she had thirty in all.

In regard to rabbit rations, the United States Department of Agriculture supplies the following:

Clean oats (whole or crushed), bright, well-cured hay, and a small portion of some kind of greens daily is the steady diet used in most rabbitries. Crushed barley may be substituted for oats; clover or alfalfa may be used with green oats or timothy hay; and the greens may consist of carrots, rutabagas, prunings from apple and cherry trees, and plantain, dock, burdock, dandelion, cauliflower, lettuce or lawn clippings. All grass should be clean, and not fed when moldy or fermented. A variety of feed is essential.

Warm mashes should be given daily to the nursing doe and to young rabbits for a time after they are weaned. All rabbits are benefited by warm mashes in very cold weather.

The quantity of grain required by rabbits depends

on their age and condition, and also on the kind and quantity of other feed they receive. Some rabbits require more grain than others. Only by noticing the condition of each animal day by day can its feed be properly regulated. They never should be allowed to become heavy with fat unless wanted for the table. Eighteen or twenty young rabbits from three to five months old having a pint of crushed oats or barley a day, in addition to plenty of dry alfalfa and greens, will grow very nicely.

Fattening rabbits for meat may begin at any time after they are 10 weeks old, and should continue 3 weeks, the animals being confined in small quarters to prevent their getting too much exercise. Reduce the proportion of their green feed, increasing that of their grain. By gradually replacing half the usual grain ration with corn meal the rate of fattening can be increased.

Most breeders feed rabbits twice daily, giving greens in the morning and dry and warm mashes in the evening, but keep a supply of dry hay constantly before them. Rabbits that are fed two or three times a day should not be supplied with a larger grain ration than they can clean up in a short time. Water should be given every morning, but in freezing weather it should be removed when the rabbit has finished drinking. Salt should be supplied with the oats two or three times a week; or a small piece of rock salt may be kept inside the feeding pan.

Hay, oats, or other coarse, dry feed should not be fed to young rabbits before they are weaned, and only limited quantities should be allowed them for a week afterward, as such feed eaten in excess causes indiges-

tion. Too much green feed is equally injurious to young rabbits during this period. Should digestive troubles result from over-eating either class of food, the bowels may be regulated by bread and milk; and an occasional feed of dandelion leaves will prove beneficial.

Cabbage leaves are not good for young rabbits, and should be fed sparingly to adults kept in hutches. In open runs a larger variety of feed may be used with safety than under hutch management. All dishes should be cleaned and scaled frequently.

The Government uses the following daily rations for goats at the experimental farm at Beltsville, Maryland:

A ration of grain, consisting of 4 parts cracked corn; 4 parts oats; 2 parts bran; 1 part oil meal. This is the average per cent, although it varies in some cases. For roughage, alfalfa is much preferred, but any hay, and even a little corn-fodder is all right. Beets, turnips, carrots, etc.—the sort of stuff there is usually a surplus of in the family garden—chopped up, makes good feed. Of course when on pasture only the milch goats get grain. Never pasture them where there is laurel, as it will kill them to eat it.

An average high-grade goat gives 4 lbs. of milk a day for 10 months of the year. Goats thirty-one-thirty-seconds pure bred are eligible to registry. Saanens are preferred to Toggenburgs at Beltsville, although there is little difference, except that the Saanens are perhaps not quite so nervous.

Not much is known about the intensive pig; but one can see at a glance that if pigs are to figure among the livestock of a Garden Home, there must be not only an intensive but an exceedingly sanitary pig. Some years

ago Dr. A. M. Ranck devised an odorless pigpen which received the hearty commendation of the Department of Agriculture during the War, when the movement for home production was at its height. The odorless pigpen was fitted with a 6x6 ft. concrete floor inside, with an outside concrete feeding floor of the same dimensions. The pen was thoroughly screened with mosquito and fly-proof wire. To the feeding floor connected a tile drain to carry off the refuse, this drain being also connected to the bottom of a large wallowing basin to be filled with pure water for the pig's bath. A wooden plug of about 6 inches in diameter was used to stop the outlet in the bottom of this basin; the water-trough at the right of the door inside the pen, being sunk into the concrete floor. A door was constructed in the outside pen so that dirt and refuse could be thrown out with a small shovel.

The pen was so arranged that it could be flushed out every day from an inside tap to which a hose was attached; though buckets of water could be used if there were no hose connections. Ventilation was provided by three doors, opening South, East and West. The house was located within 30 yards of the back of the residence, for convenience in carrying the kitchen waste to the pigs.

The cost of the house was as follows:

Lumber	\$15.00
15 sacks of cement	9.00
2 sq. yds. gravel	4.00
1 sq. yd. sand	2.00
Hardware	1.50
Labor	<u>20.10</u>
	<u>\$51.60</u>

The above does not include 86 joints of tile and the labor of putting in the drain. Two pigs weighing 50 and 54 lbs. were placed in the pen and for 120 days an average of 2 quarts of corn a day and from 14 to 40 lbs. of kitchen waste, such as potato parings, the outside leaves of vegetables, scraps from the table, dishwater and skim milk was fed. The pigs gained 142 pounds weight, and were killed for home use.

CHAPTER V

THE BEST TEACHERS—EXAMPLE AND EXPERIENCE

THERE is no text-book for the people of a garden city so good as successful example. The founders of such communities owe it to themselves and to their followers to see that this mode of teaching is provided at the outset of the undertaking.

The ideal demonstrator is the man who has been through the experience himself, for the purpose of satisfying his own hunger for a home-in-a-garden. He must be both believer and practitioner—even a devotee, if you please. He must be possessed by the conviction that of all the jobs a heedless civilization has left undone the biggest and most vital is the job of making it possible for every ambitious, industrious family to insure itself against hunger and want, as prudent men insure themselves against other risks.

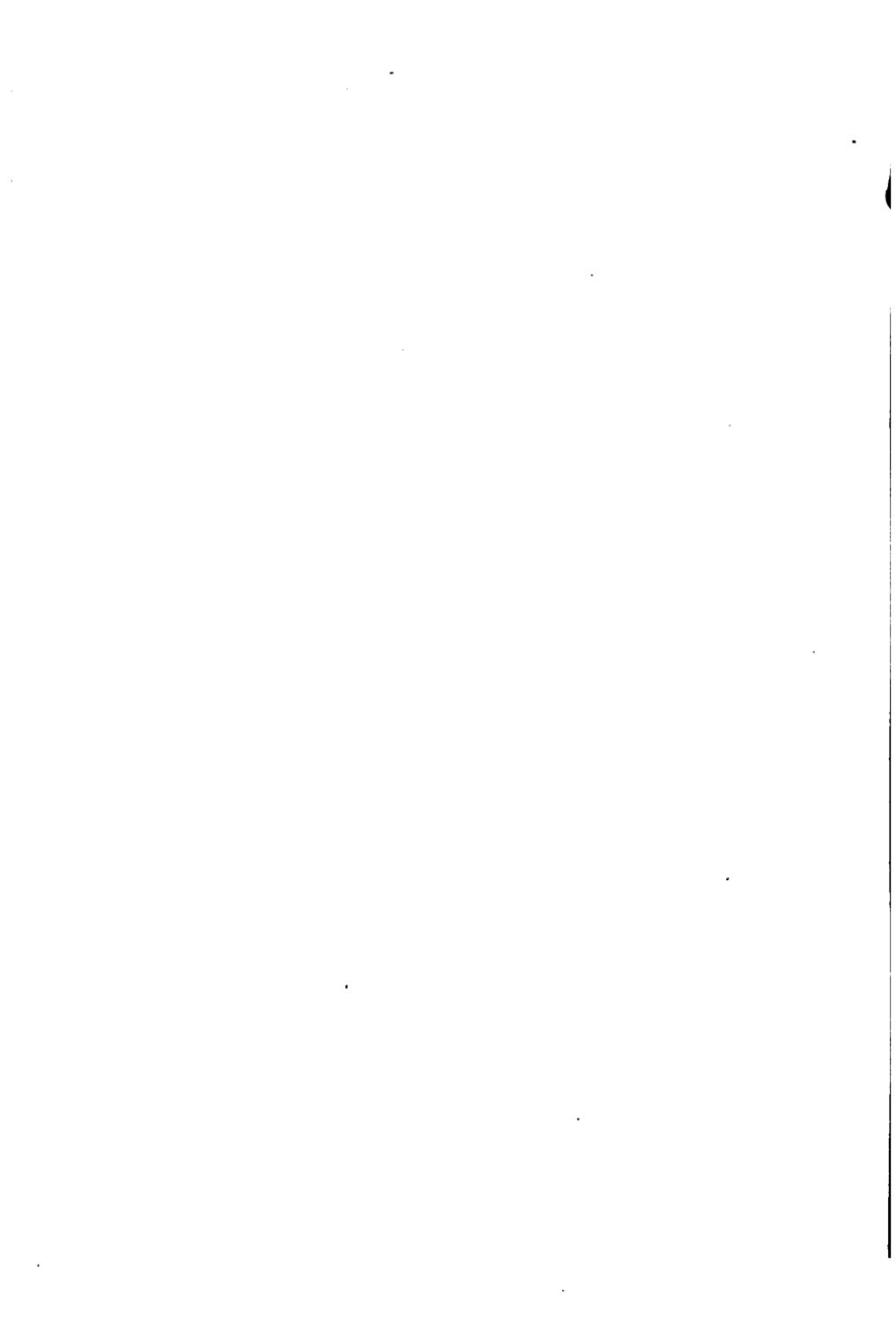
Find such a man—there are many to be had, and there will be many more in the future—establish him at the very beginning in a demonstration place fitted to stand as a model for others to emulate, and the standard of a thousand garden homes is set up, just as the flag of our country is raised on the Fourth of July. This is the first constructive step in true community-building. It is worth all the books that could be written. The day will come when such demonstration places will be as

common as public school-houses; and, indeed, they are indispensable to any system of education in a nation of free men.

The ideal demonstrator is a man with a wife who shares with him both the ideals of the garden home, and a comprehensive knowledge of its technique. This is true because this sort of a home is in the highest sense a domestic establishment. I love to think of it as the perfect setting for domestic happiness—this enduring provision for food and shelter in the midst of congenial neighbors. To make it precisely that is the crux of the demonstration.

The final test, the conclusive teaching, comes with experience. The best text-book and the best demonstration can only show the way. There will be varying degrees of success; and there will be disappointments, ranging all the way from partial to total failure. The end to be aimed at is good average success. This largely turns upon the psychology of the community, and that is a matter which depends much upon the quality and spirit of leadership in various departments of the community life.

It has been well said that leadership is never conferred; it is assumed. Happy is the community where it is assumed by the right men and women—by those who deeply realize that the New Earth is to be a holy place, and that the opportunity to assist in its evolution, in a capacity however humble, is a call to holy service.



PLANTING TABLE

Vegetable	Quantity required for 100 feet of row	Distance apart in inches		Depths of Planting Inches	Time of Planting	Mature (In days except as noted)
		Rows	In Row			
Asparagus seed ..	1 oz.	12 to 24	3 to 6	1/4 to 1	Early spring	3 to 4 yrs.
Asparagus plants ..	60 to 80	36 to 48	15 to 20	8 to 10	Early spring	1 to 3 yrs.
Beans, snap	1/2 to 1 pt.	90 to 94	4 to 6	1	April to August	40 to 65
Beans, pole	1/2 pt.	36 to 48	Hills 24-36	1	May and June	50 to 80
Beans, Lima, bush ..	7/8 to 1 pt.	18 to 24	4 to 6	1	May and June	60 to 90
Beans, Lima, pole ..	1/2 pt.	36 to 48	Hills 24-36	1	April to June	60 to 80
Beets	2 oz.	12 to 18	5 or 6 to ft.	1 to 2	April to July	60 to 80
Brussels sprouts ..	1/2 oz.	24 to 30	16 to 24	1/2	April to August	60 to 80
Cabbage, early	1/4 oz.	24 to 30	12 to 18	1/2	March and April	60 to 80
					(Start in hotbed during February)	90 to 130
Cabbage, late	1/4 oz.	24 to 36	16 to 24	1/2	May and June	90 to 130
Carrot	1 oz.	18 to 24	6 or 7 to ft.	1/2	April to June	75 to 110
Cauliflower	1 packet	24 to 30	14 to 18	1/2	(Start in hotbed during February or March)	100 to 130
Celer	1/4 oz.	18 to 36	4 to 8	1/2	May and June	100 to 130
					(Start in hotbed during March or April)	120 to 150
Chard	1/2 oz.	18 to 24	4 to 6 to ft.	1/2	April to July	60 to 80
Corn, sweet	1/2 pt.	30 to 36	30 to 36	1 to 2	May to July	60 to 100

Cress, upland	$\frac{1}{2}$ oz.	12 to 18	4 to 5 to ft.	$\frac{1}{2}$ to 1	March to May	30 to 40
Cucumber	$\frac{1}{2}$ oz.	48 to 72	48 to 72	1	April to July	60 to 80
Eggplant	$\frac{1}{2}$ oz.	24 to 36	18 to 24	$\frac{1}{2}$ to 1	April and May. (Start in hotbed during March)	60 to 80
Endive	1 oz.	18	8 to 10	$\frac{1}{2}$	Midsummer	90 to 180
Horse-radish	70 roots	24 to 30	4 to 6	3 to 4	Early spring	1 to 2 yrs.
Kale	$\frac{1}{2}$ oz.	18 to 24	6 to 8	$\frac{1}{2}$	Early spring, and August and Sep- tember	90 to 120
Kohlrabi	$\frac{1}{4}$ oz.	18 to 24	4 to 6	$\frac{1}{2}$	April to August	60 to 80
Lettuce	$\frac{1}{2}$ oz.	12 to 18	4 to 6	$\frac{1}{2}$	March to Septem- ber	60 to 90
Muskmelon	$\frac{1}{2}$ oz.	72 to 96	Hills 72	1	April to June. (Start early plants in hotbed during March)	90 to 120
Okra or Gumbo	2 oz.	36 to 48	24 to 30	1 to 2	May and June	120 to 150
Onion, seed	1 oz.	12 to 18	5 or 10 to ft.	$\frac{1}{2}$ to 1	April and May	60 to 90
Onion sets	1 qt.	12 to 18	4 or 5 to ft.	1 to 2	Autumn, and March to May	130 to 150
Parsley	$\frac{1}{4}$ oz.	12 to 18	3 to 6	$\frac{1}{8}$	Early spring, and September	90 to 120
Parsnip	$\frac{1}{2}$ oz.	18 to 24	4 or 6 to ft.	$\frac{1}{2}$ to 1	April and May	90 to 120
Peas	1 to 2 pints	36 to 48	15 to ft.	3 to 4	March to June	125 to 160
Pepper	$\frac{1}{8}$ oz.	18 to 24	15 to 18	$\frac{1}{2}$	May and June. (Start early plants in hotbed during March)	40 to 80
Potato, Irish	5 lbs.	24 to 36	14 to 18	3 to 5	March to June	100 to 140
						80 to 140

PLANTING TABLE—Continued

Vegetable	Quantity required for 100 feet of row	Distance apart in inches		Depths of Planting Inches	Time of Planting	Mature (In days except as noted)
		Rows	In Row			
Potato, sweet	75 slips	36 to 60	14	2 to 3	March to June	100 to 130
Pumpkin	1/2 oz.	96 to 144	96 to 144	1	May	100 to 140
Radish	1 oz.	12 to 18	8 or 12 to ft.	1/2	March to September	20 to 40
Rhubarb plants	38	36 to 60	36 to 48	* Note 1/2 to 1	Early spring	1 to 3 yrs.
Rutabaga	1/4 oz.	18 to 24	6 to 8	1/2	May and June	60 to 80
Salsify	1/2 oz.	18 to 24	2 to 4	1 to 2	Early spring	120 to 180
Spinach	1 oz.	12 to 18	7 or 8 to ft.	1/2	September or very early spring	30 to 60
Squash, bush	1/2 oz.	36 to 48	Hills, 36-48	1	April to June	60 to 80
Squash, late	1/2 oz.	84 to 120	Hills, 84-108	1	April to June	120 to 160
Tomato, seed	1/3 oz.	36 to 48	90 to 36	1/2 to 1	(Start early plants in hotbed during February and March)	100 to 140
	1/3 oz.	36 to 48	90 to 36	1		
Tomato, plants	33 to 40	36 to 48	90 to 36	May and June. (Start early plants in hotbed during February and March)	80 to 100	
	33 to 40	36 to 48	90 to 36			
Turnip	1/2 oz.	18 to 24	6 or 7 to ft.	1/4 to 1/2	April and August	60 to 80
Veg. marrow	1/2 oz.	96 to 144	Hills, 96-108	1 to 2	April to June	110 to 140
Watermelon	1/2 oz.	96 to 120	96 to 120	1	May	100 to 190

* Set rhubarb plants so that growing tips are at surface of ground.

Absolute dates for planting can not be given, because of variations in seasons from year to year, and varying climatic conditions in different sections.

THE HOPE OF THE LITTLE LANDS

That individual independence shall be achieved by millions of men and women, walking in the Sunshine without fear of Man.

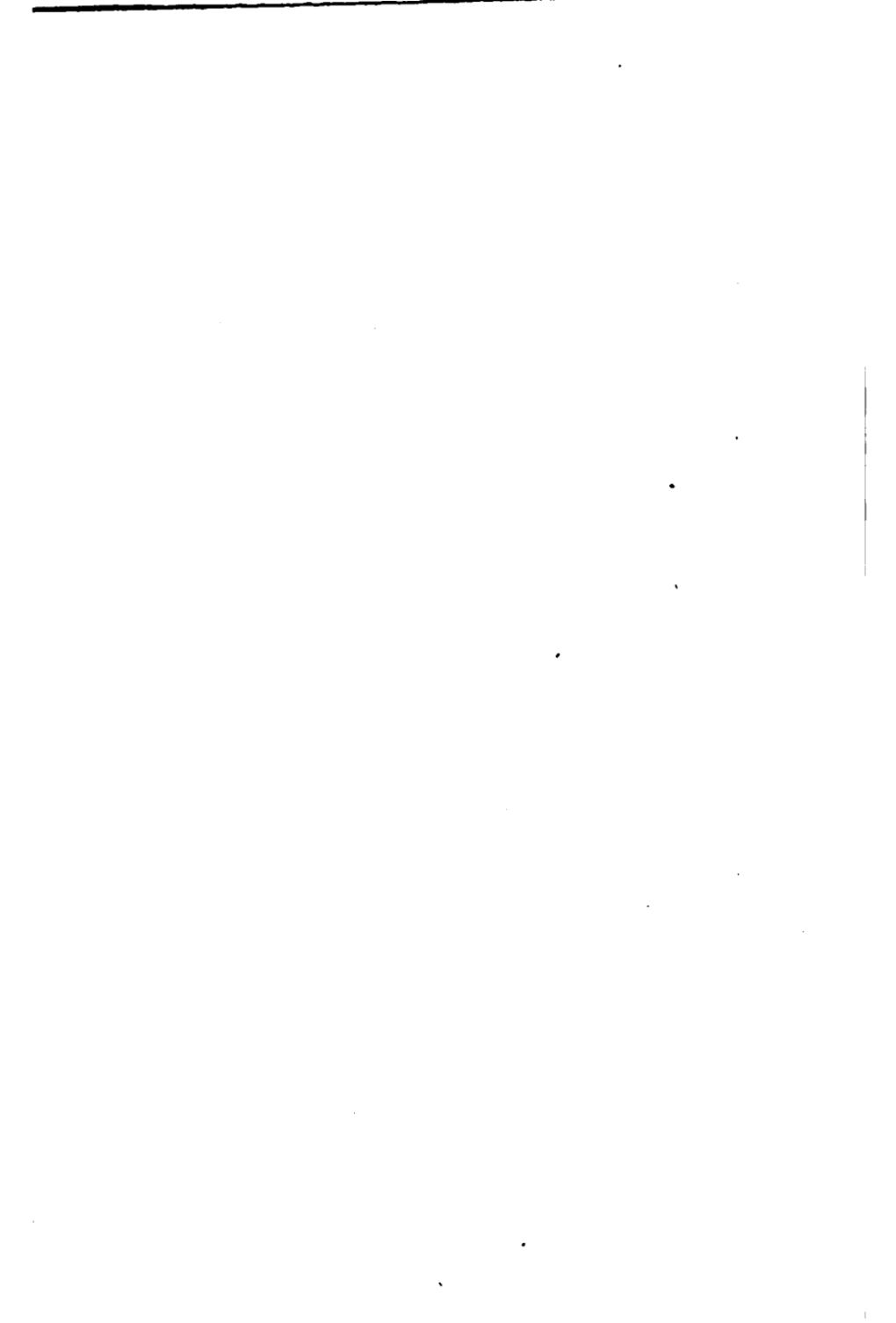
That in response to the loving labor of their hands, the earth shall answer their prayer: "Give us this day our daily bread."

That they and their children shall be proprietors rather than tenants, working not for Others but for Themselves.

That Heirs shall be the life of the Open—the Open Sky and the Open Heart—fragrant with the breath of flowers, more fragrant with the Spirit of Fellowship which makes the good of One the concern of All, and raises the individual by raising the Mass.

William Morris, Jr.

L'ENVOI



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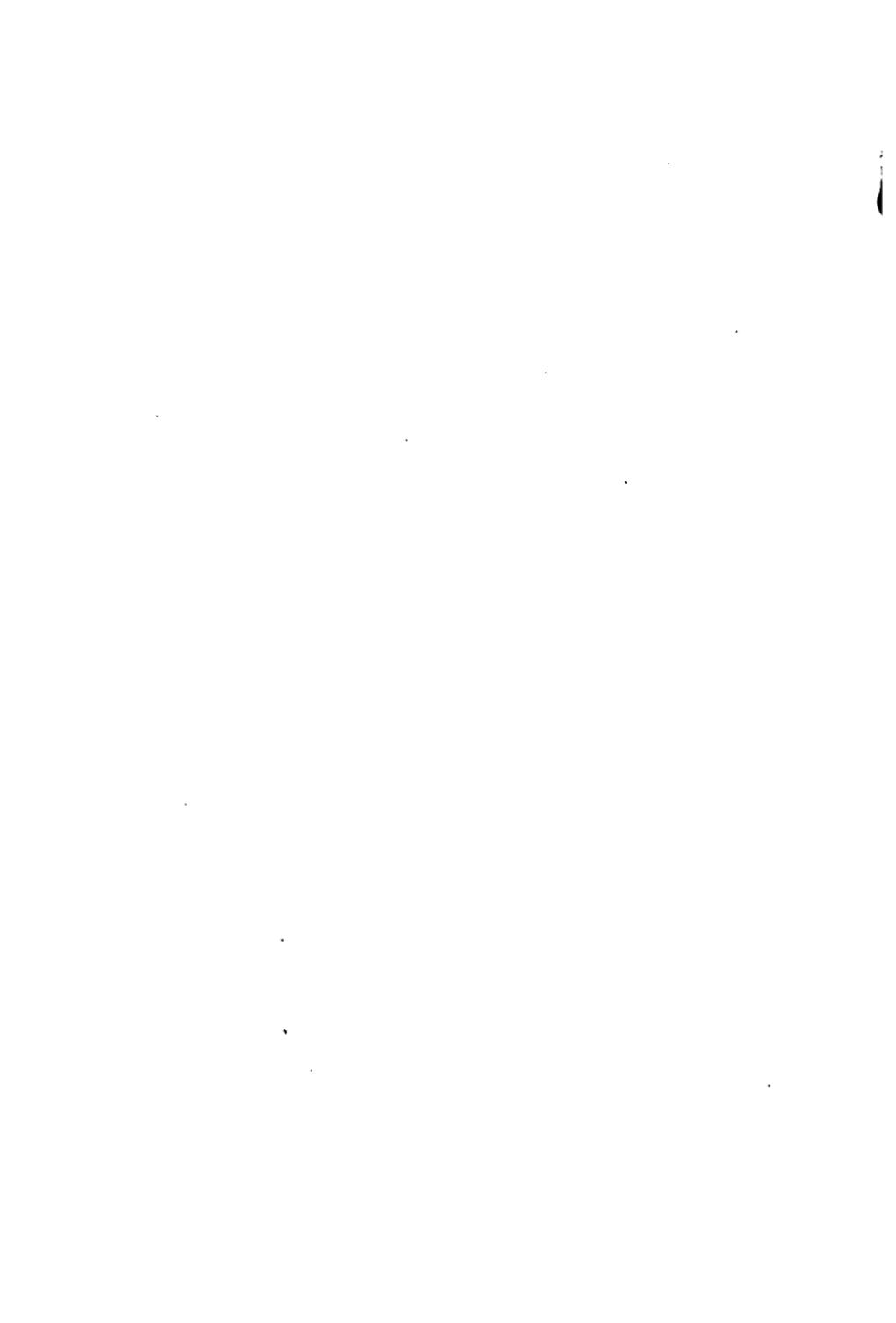
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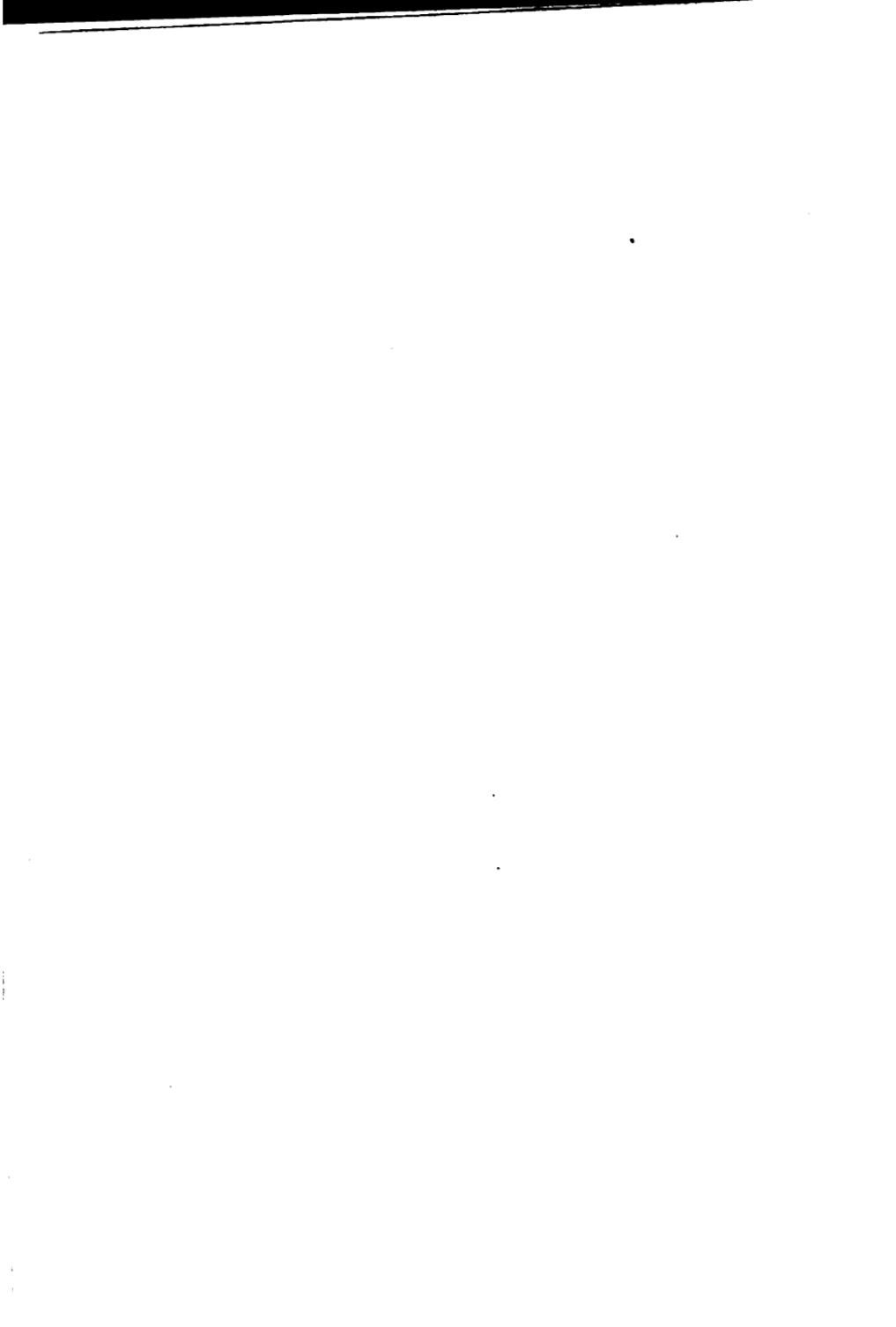
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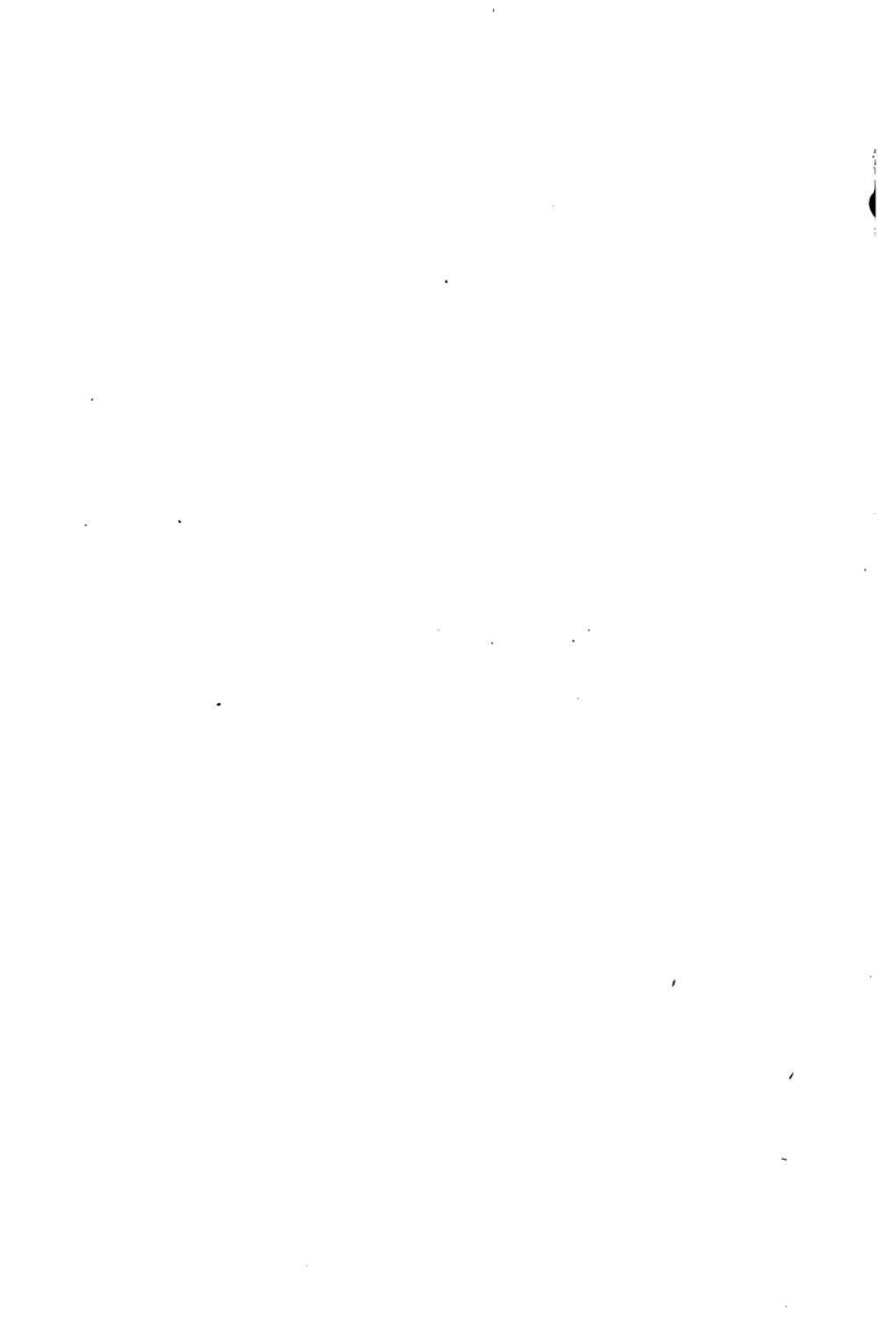
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DATE DUE

~~JUN 3 1977~~

~~JUN 1 1979~~

~~FEB 1 1981~~

JAN 27 REC'D 1981

~~FEB 17 1982~~

APR 26 1988

~~MAY 24 1988~~

MAY 2 1989

JUN 27 1989

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